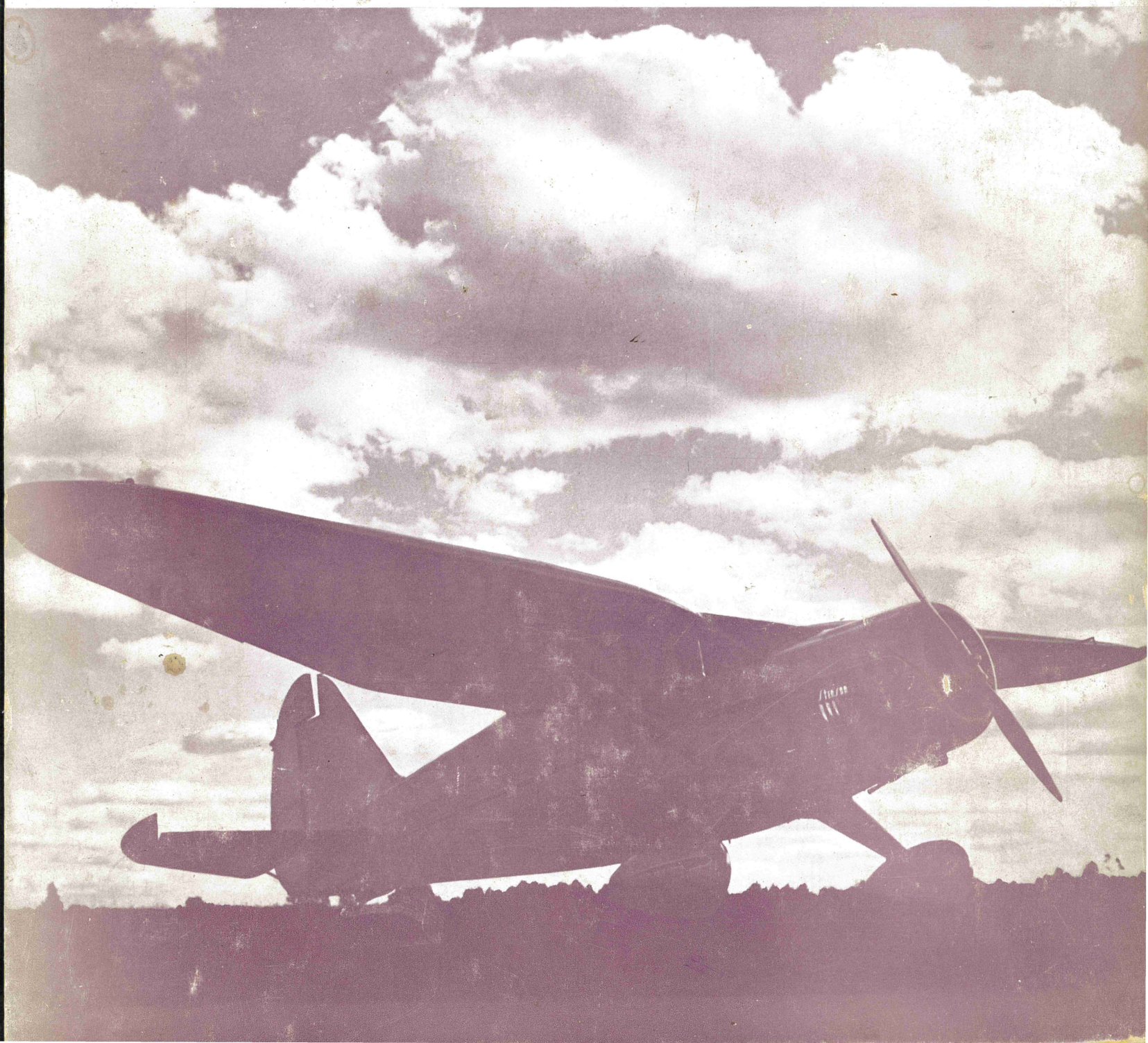
A PLAN FOR THE DEVELOPMENT OF AIRPORTS AND AIRWAYS IN NEW HAMPSHIRE



A PLAN
FOR THE DEVELOPMENT OF AIRPORTS AND AIRWAYS
IN
NEW HAMPSHIRE

Prepared by

The Advisory Committee on Air Transportation

of the

State Planning and Development Commission

Published by

The State Planning and Development Commission

with the Cooperation of

The State Director of Aeronautics

1940

NEW HAMPSHIRE
PLANNING AND DEVELOPMENT COMMISSION

Chairman
James M. Langley

Allen Hollis — Edmund F. Jewell — Guy L. Shorey

Planning Director
Frederick P. Clark

THE ADVISORY COMMITTEE ON AIR TRANSPORTATION

Chairman
Claude H. Swain
Public Service Commissioner

Maj. Horton L. Chandler	Aircraft Pilot Accountant, Public Service Commission
Daniel H. Dickinson	Chief Engineer, State Highway Department
W. Russell Hilliard	Airport Engineer, State Aeronautics Department
Prof. Martin L. Lindahl	Department of Economics, Dartmouth College
Willis D. Thompson, Jr.	Businessman active in the development of N. H. aviation

Herbert C. Person, *Clerk*
Planning Engineer,
Planning and Development Commission

ACKNOWLEDGMENTS

The Advisory Committee on Air Transportation desires to acknowledge the assistance of numerous persons who provided both services and useful material in the preparation of this report. Mr. Justin R. Hartzog, consultant loaned by the National Resources Planning Board, has contributed valuable advice. The files of the Public Service Commission were made available and interpretation of their contents rendered by Mr. Winslow E. Melvin, Director of Transportation.

All airport managers in the State have been most co-operative in furnishing data for their respective fields; their help has been of great value. The assistance of air pilots is also acknowledged in supplying information regarding their flying activities. The Civil Aeronautics Authority has provided complete information regarding federal requirements.

Foreword

IN 1934, the Advisory Committee on Transportation was established by the State Planning Board for the purpose of analyzing transportation problems of the State and of making appropriate recommendations. The first phase of its work was confined to public passenger carriers, including steam railroads, electric railways, motor busses, taxicabs, contract carriers and star mail routes, and resulted in a highly useful report "Public Passenger Carriers in New Hampshire—Part I."

The Advisory Committee with somewhat changed personnel was asked to continue its work by considering transport by air, and representatives of the State Aeronautics Department, the State Public Service Commission and the State Highway Department, as well as several qualified private citizens, consented to attack this phase of the comprehensive transportation study.

This report presents the results of the Advisory Committee's work—a comprehensive plan for the development of air transportation facilities in New Hampshire. Although developed primarily for ordinary civil requirements, the plan provides for development of facilities of military importance. Without question this important study will do much to assist the State and Federal Government in adopting sound policies with regard to the development of air transportation, preventing such mistakes as can be avoided by careful planning.

During its work the Advisory Committee co-operated with the New England Regional Planning Commission in the development of a New England airways plan, and in 1936 completed a preliminary report which was submitted to the U. S. Civil Aeronautics Authority. This federal agency used the report and its accompanying data in the preparation of a national airport and airways development program.

Since the Advisory Committee was asked to continue this work, the office of State Director of Aeronautics has been established. With the approval of the Director, Mr. James F. O'Neil, the plan has been completed and is published by the State Planning and Development Commission with his co-operation and for continued use by his department in the important work of encouraging development of airports and airways in the State.

The Commission wishes to acknowledge its appreciation for the time and effort spent by the Advisory Committee in preparing this forward-looking study. The research work and studies upon which the report is based were ably conducted by Mr. Herbert C. Person, planning engineer of the Commission's research and planning staff, and Mr. W. Russell Hilliard, airport engineer of the State Aeronautics Department.

ADVISORY COMMITTEE ON AIR TRANSPORTATION
of the
New Hampshire Planning and Development Commission

CLAUDE H. SWAIN, Chairman
MAJ. HORTON L. CHANDLER
DANIEL H. DICKINSON
W. RUSSELL HILLIARD
PROF. MARTIN L. LINDAHL
WILLIS D. THOMPSON, JR.
HERBERT C. PERSON, Clerk

July 23, 1940

State Planning and Development Commission
Concord, New Hampshire

Gentlemen:

Your Advisory Committee on Air Transportation herewith transmits to you its report covering the various phases of its survey and study of air transportation and air transportation facilities in the State of New Hampshire.

Early in its consideration of the information and data gathered at our direction by the staff of your Commission, it became apparent that any program providing proper and adequate facilities for air transportation under present conditions would require the expenditure of considerable sums of money if the recommendations made were adopted and carried out. In support of such expenditures by governmental agencies, attention has been called to the public nature of airport facilities, comparable in many respects to those of port and highway facilities. Unfortunately the comparisons end short of the matter of revenue collections for the use of these facilities to provide for future maintenance and amortization of original construction costs over a period of years. Further than this, in the case of air transport facilities it appears that, aside from national defense needs, the public interest in such facilities was and is far more limited than in the case of port and highway facilities. It is apparent that lack of earning power requires that air transport facilities be largely subsidized by public funds. Moderate public interest in such facilities in many communities may make it difficult if not impossible to secure funds for the construction and maintenance of adequate and proper facilities.

In view of the foregoing facts your committee, in its deliberations, has largely disregarded economic justification for the program which it recommends, but has sought to provide for facilities which at present and in the near future would appear to best serve the State and at the same time be proper for present New England and National plans. Likewise, we have largely disregarded local interest, except to the extent that it has already been manifested by the construction and maintenance of present facilities. The

determination of whether or not the public interest in this matter is sufficient to warrant the raising and expenditure of funds rests with the legislative bodies of government.

We have approached the problems with a friendly and sympathetic attitude toward air transport. Because of this fact our recommendations may appear somewhat ambitious, although in advancing these we based the needs of the State upon a continuation of the normal progress in air transport over the past few years. It is possible, however, that the program of development, liberal as it is, is entirely inadequate in view of the tremendous increase in plane usage which will flow from present national defense plans. The immediate need for thousands of pilots spells training schools for pilots and ground crews, training planes, hangars, shops, proper fields, etc. Available fields will to a considerable extent govern the selection of points of activity for such purposes. If this country escapes actual warfare, settled conditions elsewhere will likely be followed by greatly increased plane usage for other than war purposes, especially if the step-up in production results in lower plane costs. The war has further demonstrated that mass transportation by air is possible, opening up many avenues for speculation as to the future of air transport. Complicating factors in estimating needs for the future include the effect of depression and recession, with their uncertainties, upon individual planning, and the increasing popularity of the State as a recreational area summer and winter.

The committee has made a study of historical development, existing facilities, developments in New England and elsewhere in the country, and has attempted to make recommendations which will keep the State abreast of developments elsewhere. Any consideration of the advantages of air transport occasions some surprise that it has not developed much faster than it has, and leads to the belief that the training of thousands of pilots will have much the same effect on plane usage that occurred when private chauffeurs for automobiles ceased to be considered a necessity.

It has been necessary for the committee to consider matters which are highly speculative. Theoretical perfection of facilities desired by the enthusiast must be tempered by that degree of perfection which may be achieved as a practical matter. Likewise, too enthusiastic visions of the usage of facilities must be modified by the probabilities to the extent that these can be reasonably estimated. Our attempt has been to weigh all factors and to submit recommendations which reasonably reflect our conclusions.

Respectfully submitted,

ADVISORY COMMITTEE ON AIR TRANSPORTATION

Claude H. Swain

CLAUDE H. SWAIN, *Chairman*

JAMES F. O'NEIL
DIRECTOR

State of New Hampshire

AERONAUTICS DEPARTMENT

July 1, 1940

CONCORD

The office of the State Director of Aeronautics feels confident that the Plan for the Development of Airports and Airways in New Hampshire, as prepared by the Advisory Committee on Air Transportation of the State Planning and Development Commission, will prove adequate for New Hampshire for several years to come. In its preparation, both the military and civil aspects of aviation were considered, and if the program, as recommended, is followed, not only will a civil airways system for the State be developed, but also a more adequate defense for the nation will be provided.

The office of the State Director of Aeronautics wishes to take this opportunity to thank the members of the Advisory Committee on Transportation for their efforts in preparing this comprehensive plan, and expresses its appreciation to the State Planning and Development Commission for its assistance in its preparation and publication.

James F. O'Neil

JAMES F. O'NEIL,
Director of Aeronautics

The Development of Aviation in New Hampshire

EARLY HISTORY

First Flight

The first recorded flight of any airplane in New Hampshire was made from Waltham, Mass., by Harry Atwood on June 19, 1911. Landings were made at improvised fields with the aid of white flags to locate landing areas at Lowell, Mass., Manchester and Nashua, N. H. The original intention was to fly from Waltham, Mass., to Laconia, N. H., in order to break the existing American long distance record for aerial navigation. However, through delays caused by large crowds at Nashua and Manchester, most of whom had never seen a plane, the flight ended at Concord, due to darkness. The route followed the Merrimack River from Nashua to Manchester and Concord. The total time for the trip of sixty-nine miles was two hours and forty-six minutes.

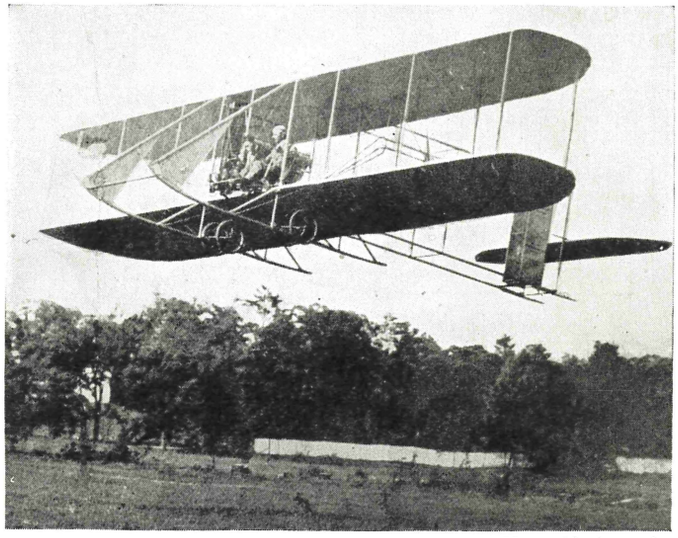
The first messages delivered by air in the state were carried on this trip. Governor E. N. Foss of Massachusetts sent greetings to Governor Robert P. Bass of New Hampshire. Letters were also delivered to the mayors of the various cities along the route.

Early Introduction of Aviation in New Hampshire

Probably the first plane owned by a resident of this state was the Canadian Curtis, an open cockpit plane, brought from Toronto, Canada, by Capt. Robert S. Fogg and Willis D. Thompson, Jr., in 1920. Their first hop was from Toronto, Canada, to Buffalo, N. Y. Due to delays en route, they decided upon the almost unprecedented procedure of flying directly across country from Albany, N. Y., to Concord, N. H., without a compass or guide other than the sun, as the flight was almost due east. They left Albany at an early hour in order to arrive in Concord before the sun had reached sufficient height to deflect them from their course. At this time there were no air markings or other aids to air navigation for locating points on the ground. However, the flight was successful and the plane was landed on the National Guard camp ground at Concord Plains on July 4, 1920.

Charles W. Howard, former Adjutant General of the New Hampshire National Guard, placed the state camp grounds at the disposal of Captain Fogg and other flyers while the work of locating and constructing a suitable landing field was in progress. Fogg engaged in charter service and in sightseeing operations, using the camp ground as a base. The summer of 1923 he established a seaplane base at The Weirs from which he operated the first R.F.D.* Air Mail Service in the country, serving a schedule of summer residents on the shores of Lake Winnipesaukee.

* R.F.D. — Rural Free Delivery.



Harry N. Atwood

The first airplane to fly into New Hampshire. Burgess-Wright biplane piloted by Harry N. Atwood on the memorable flight from Waltham, Mass., to Nashua, Manchester, and Concord, June 19, 1911.

GROWTH OF COMMERCIAL AVIATION

First Scheduled Operations

Outside of barnstorming and sight-seeing operations, the earliest commercial aviation operation over an established route was a special charter service inaugurated by the Northeast Airways from Concord and Manchester to Boston in July, 1928. A flying school was organized and flying instruction was given to the students during the summer and ground instruction during the winter. That this venture was successful can be seen from the fact that while it started with one plane in 1928, a second plane was added in 1929 and in 1930 three more planes were purchased. In April 1933, the Northeast Airways extended their field of operations by flying on call from Concord via Manchester to Boston, Mass., connecting with airline service at the East Boston Airport. Due to the business depression and declining revenues this corporation ceased operations in October, 1933.

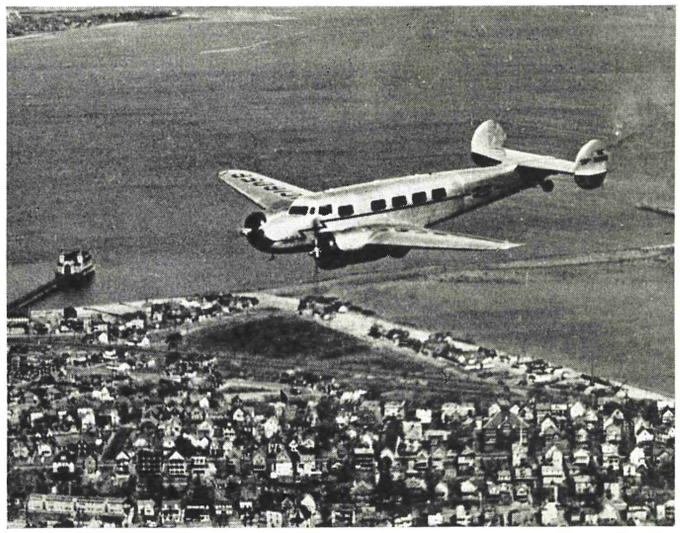
Initial Airline Operations

A tremendous impetus was given to the development of aeronautical facilities in 1933 when the Boston & Maine, Maine Central and Central Vermont Railroads agreed jointly to initiate a regular airline service. This was the first venture by a steam railroad in complete operation of an airline. The airline operated from the East Boston Airport as a general terminus, to Bangor, Maine, a flying distance of 210 miles. The first trip was made on August 11, 1933. In 1939, the airline was extended to Caribou, Maine, an additional 140 flying miles.

Approximately two months after the initiation of the Boston-Bangor service, the Central Vermont Airways began flying one round trip daily between Boston and Montpelier, Vermont. The first flight on this line was made on October 27, 1933. Intermediate stops were at Concord and at White River Junction; later Manchester, originally designated as a port of call upon signal, was placed on schedule as a regular stop. In 1934, the route was further extended to Burlington, Vermont, and then to Montreal, Canada.

The securing of an airmail contract by the Boston & Maine and Central Vermont Airline on June 25, 1934, made possible an additional round trip daily. The operation of this line followed the general experience of the country as a whole, that at the existing rate of fares and amount of passenger traffic, an airline could only succeed with an airmail contract. On December 3, 1934, the line began carrying air express.

Today, more frequent service by faster transport planes provides New Hampshire with twenty-four-hour transcontinental service and direct connection with all the larger cities in the country.



Boston & Maine Railroad

A flight photo of a fast Lockheed passenger plane operating on a regular service schedule in New Hampshire, and providing direct connections to other parts of the country.

Trends in New Hampshire Aviation

Prior to 1930 there were no reliable statistics on the number of planes and airmen in the state. The earliest dependable figures are those of August 1, 1930, when the Public Service Commission was given jurisdiction over air transportation. At that time there were forty-eight planes and fifty-five pilots registered in New Hampshire. These figures include some non-resident pilots and airplanes. Registration of landing areas was not required until the following year, when twenty-four airports were registered.* As a result of the business depression, all registrations declined, but since 1937 there has been a general increase over the low year. In 1939, there were one hundred and eighty-eight airmen and sixty-four planes, although fewer landing areas were registered than in previous years.

***DEFINITIONS**

Airport: The term "airport" means any locality, either of water or land, which is adapted for the landing and taking off of aircraft and which provides facilities for shelter supply, and repair of aircraft; or a place used regularly for receiving or discharging passengers or cargo by air.

Landing Field: The term "landing field" means any area of land designed for the take-off and landing of aircraft. It may or may not be part of an airport.

Auxiliary Field: The term "auxiliary field" means an area designed for the take-off and landing of aircraft primarily in the event of an emergency. The area may or may not serve a local community.

All-way Type of Landing Field: The term "all-way type of landing field" means a landing field usable in all directions for the landing and taking off of landplanes or seaplanes.

Landing Strip Type of Landing Field: The term "landing strip type of landing field" means a landing field so constructed as to be usable for the landing and taking off of landplanes or seaplanes in certain directions only.

Landing Strip: The term "landing strip" means a narrow and comparatively long area, comprising a portion of an airport, usable for the landing and taking off of landplanes or seaplanes.

Runway: The term "runway" means that portion of an airport which is paved or hard-surfaced and adapted for the landing and taking off of landplanes.

Apron: The term "apron" means a hard surfaced strip in front of and immediately adjacent to airport buildings used primarily for parking aircraft and as a loading area.

Taxi-way: The term "taxi-way" means a hard surfaced strip connecting other hard surfaced areas, and providing access to aprons and loading areas.

For the purpose of this report those areas designated as airports will be those suitable in all respects for use as a terminal by scheduled airlines operating large landplanes; those areas designated as landing fields will be those suitatble in all respects for use by operators or flyers of landplanes in chartered or itinerant operations; those areas designated as auxiliary fields will be those suitable in all respects for use in case of emergency by operators and flyers of landplanes, and may in addition be used for local flying operations.

FEDERAL AND STATE REGULATION OF AVIATION

Air Commerce Act

Aviation was first recognized as a part of the transportation system of this country when Congress enacted the Air Commerce Act of 1926. Under this act the aeronautics branch of the Department of Commerce was charged with the regulation, promotion and development of air commerce. However, some phases of regulation remained with other departments of the Federal Government. The Bureau of Air Commerce regulated aviation from a safety standpoint and provided airways.

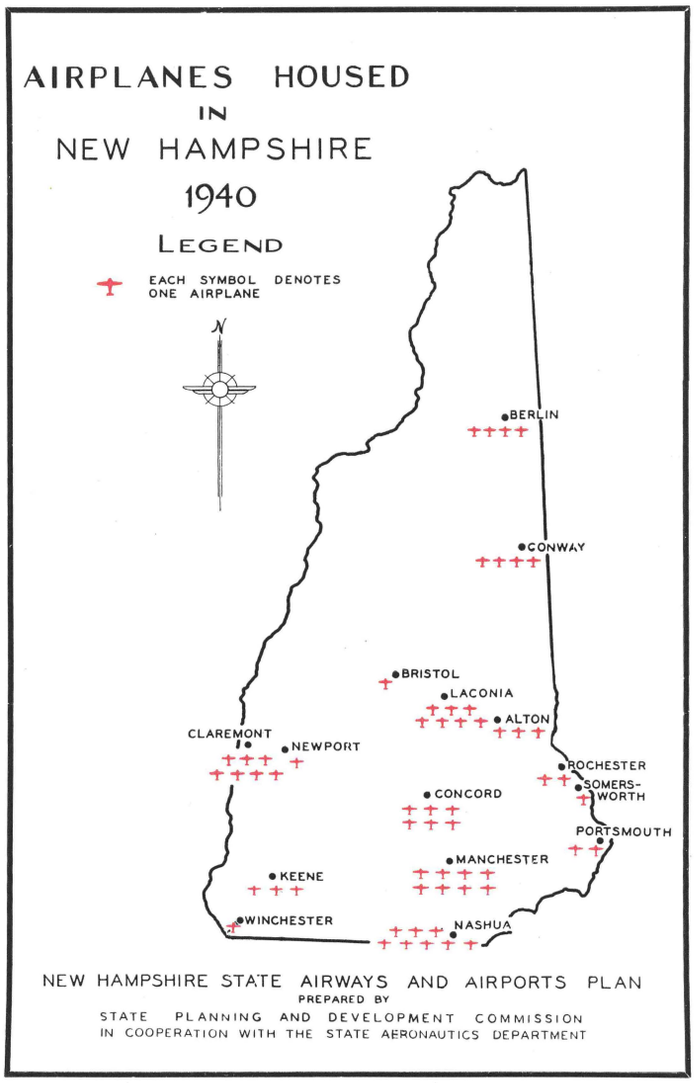
History of the Civil Aeronautics Board

The Civil Aeronautics Act of 1938 created a new body known as the Civil Aeronautics Authority and an independent Air Safety Board. Regulation of all forms of air transportation were centered in the Authority. All aircraft and airmen engaging in commercial interstate operations or flying the civil airways came under the jurisdiction of the C.A.A. Certification of airmen, aircraft and component services were handled in a manner similar to the former licensing of airmen and aircraft. The new Authority was charged also with the economic regulation of aviation, rate fixing, service requirements, etc. The Air Safety Board investigated all accidents and assisted the Authority by studying matters relative to aviation safety. By Executive Order effective June 30, 1940, the President transferred the activities of the Authority to the Department of Commerce and eliminated the Air Safety Board. The designation of the new federal agency is the "Civil Aeronautics Board."

The Civil Airways, constructed and maintained by Federal funds, now comprise 25,425 miles of airways. They are fully equipped with lighting facilities, intermediate landing fields, radio directional beacons and teletype circuits for the accumulation and dissemination of weather data.

New Hampshire Flying Regulations Since 1929

Realizing that the Federal regulations did not control intrastate flying adequately, a number of New Hampshire pilots and persons interested in aviation secured the passage of two laws by the 1929 Legislature. The first was designed to regulate aviation in the state following the principles and practices of the Federal Air Commerce Act. The Public Service Commission was entrusted with the control of aeronautics and given the power to make regulations to give the act effect and to safeguard the public. This act specifically provided that airmen and aircraft must be licensed by either federal or state authorities. The Commission could prohibit aircraft from being flown from and landed in places deemed unsafe. In conformity with this law, the Public



Service Commission set up its rules to carry out its function.

The second act passed at this session of the Legislature gave towns and cities authority to acquire land by eminent domain for the purpose of operating landing fields. In 1931, this act was amended to make legal the taking of land easements by eminent domain by corporations and individuals for the purpose of constructing and improving landing areas. It was further provided that all civil aircraft belonging in the state and all commercial aircraft and the pilots of these designated classes must be registered, and also all landing areas used for commercial operations.

In 1935, the Commission was authorized to suspend temporarily the right of all pilots and flyers over areas which might be designated by the Governor. In that year, too, gliders were required to be registered and the operation of such was forbidden to other than registered operators. Table I, following, shows the trend of aircraft, landing area and pilot registrations in New

Hampshire over the last decade. Table II, showing registrations for the entire United States, is offered for comparative purposes.

Table I
REGISTERED PILOTS, AIRCRAFT,
AND LANDING AREAS IN NEW HAMPSHIRE
AUGUST 1, 1931 TO JANUARY 1, 1939.

Year	*Pilots**	*Aircraft****	*Landing Fields*****	*Inland Waters*	*Ice Areas*
1931	99†	59	26	**	**
1932	89	46	19	**	**
1933	64	39	16	15	0
1934	66	41	19	9	4
1935	81†	41	18	13	1
1936	113	62	15	19	3
1937	135	68	14	30	2
1938	150	64	14	28	0
1939	188	64	12	29	4

* Includes resident, non-resident and student pilots
** Registration not recorded
*** Includes unlicensed and "non-resident" aircraft
**** Private fields not included
† Includes one mechanic
Source: Public Service Commission of New Hampshire.

Table II
PILOTS, AIRCRAFTS,
AND LANDING AREAS IN UNITED STATES
1926 TO 1939
(AS OF JANUARY 1)

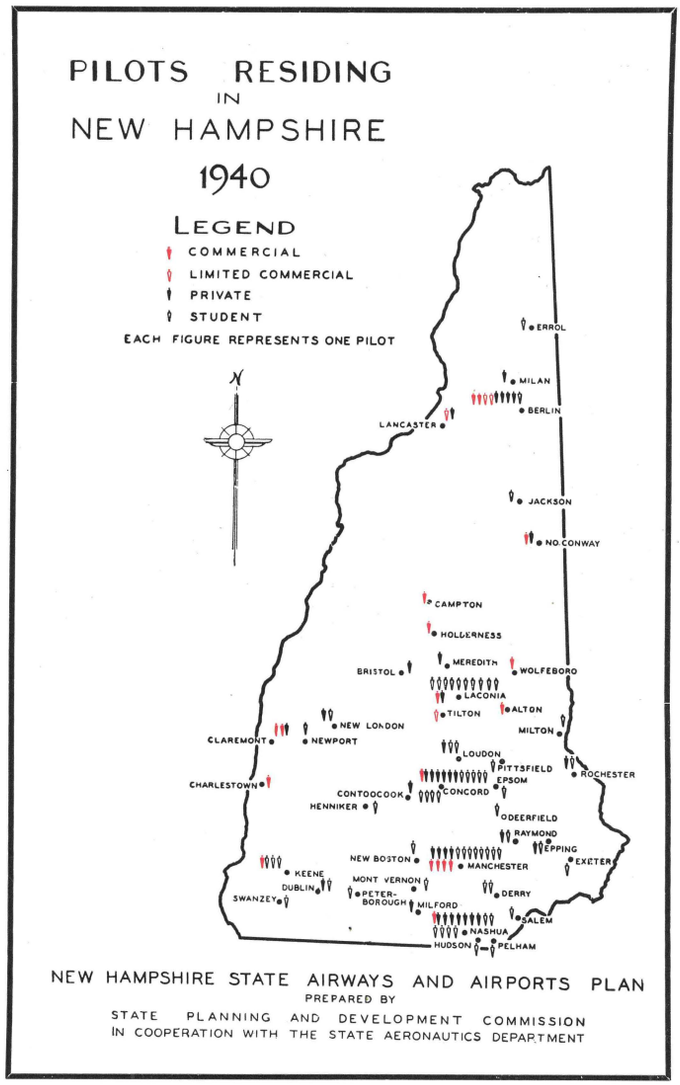
Year	*Pilots*	*Student Pilots*	*Aircraft*	*Airports*
1927	1,572	545	2,740	1,036
1928	4,887	9,717	5,104	1,364
1929	10,287	20,400	9,922	1,550
1930	15,280	18,398	9,818	1,782
1931	17,739	16,061	10,680	2,093
1932	18,594	11,325	10,324	2,117
1933	13,960	12,752	9,284	2,184
1934	13,949	11,994	8,322	2,297
1935	14,805	14,572	9,072	2,368
1936	15,952	17,675	9,229	2,342
1937	17,681	40,284	10,836	2,299
1938	22,983	38,982	11,159	2,374
1939	31,264	33,032	13,772	2,280

Source: Air Commerce Bulletin, Vol. 8, No. 12, June 15, 1937
Air Commerce Bulletin, Vol. 10, No. 7, Jan. 15, 1939

New Hampshire Aeronautics Act

In general, aeronautical legislation and commission regulations have related to the licensing of planes and pilots, restricting flying operations to localities which were considered safe and enforcing the Federal and local air traffic rules. As the New Hampshire laws had directed no promotional activity, the functions of the Public Service Commission were limited to regulation.

During the period 1936 to 1939, there was included on the staff of the Public Works Division of the State Comptroller's office a state airport engineer, who gave his time to surveying possible airport locations and in promoting the establishment and improvement of landing fields, using relief labor.



NEW HAMPSHIRE STATE AIRWAYS AND AIRPORTS PLAN
PREPARED BY
STATE PLANNING AND DEVELOPMENT COMMISSION
IN COOPERATION WITH THE STATE AERONAUTICS DEPARTMENT

Recognizing the increasing importance of aviation in New Hampshire, the 1939 Legislature passed the state Aeronautics Act,* which in effect continued and expanded the work carried on by the state airport engineer of the Public Works Division. The purpose of this act is to further interest in aviation by encouragement and development of an air transportation system and civil aeronautics. The non-salaried office of Director of Aeronautics was created; his duties are to execute all matters pertaining to the promotion and development of aeronautics; to prepare and present a state-wide program for development, construction and maintenance of air navigation facilities; to exercise general supervision, control and direction over all matters pertaining to the location, construction and maintenance of these facilities.

* New Hampshire Aeronautics Act—Chapter 224, Laws of 1939.

DEVELOPMENT OF AIRPORTS AND LANDING FIELDS

Inadequate Landing Areas

At various times from 1931 to the present there have been forty-eight different fields registered in New Hampshire. In 1933, there were sixteen areas registered for commercial use; of these only three, municipal fields, could be considered safe for extensive commercial operations. The privately owned fields were inadequate; some had only been developed to satisfy the minimum requirements of registration. Landing areas varied from a field with adequate landing strips to one having but a single strip 1200 feet long and 200 feet wide. Only six had any kind of hangar; a few more were equipped to handle gas and oil. Air markings, limited in number, were decidedly deficient; no lighting had been installed. Since public funds were not available for the privately owned fields, desired plans for improvement could not be undertaken. Meadowland and open fields were utilized without any intention of further development and without the assurance that they would be maintained in a safe condition.

As a result, these landing areas could only be used by pilots who were familiar with the locality and the existing conditions. This haphazard distribution of landing areas and facilities was not conducive to the general use of land planes in the state. This would indicate that, for a state airways system, reliance must be placed on municipal fields for adequate facilities and safety rather than on the privately owned fields.

Federal Aid Available

With the continuance of the business depression and the need of putting the unemployed to work, the U. S. Bureau of Air Commerce recognized the opportunity for improving aeronautical facilities. The Federal programs gave impetus for the construction of airports and landing fields; this was true in New Hampshire, as well as the rest of the country.

Under the C.W.A.* and the E.R.A.** leasing or purchasing of land by municipalities was prerequisite for the allocation of funds; at the beginning of these programs only Concord, Manchester and Portsmouth could meet the requirements; later, Berlin, Claremont, Conway, Keene and Winchester were able to lease the necessary land; Laconia and Nashua purchased sites. There were ten municipal fields by 1934.

A total of $214,128.10 was expended in the state in 1933 and 1934 by the C.W.A. and E.R.A. for the improvement of these ten municipal fields. The work consisted of grading fields, constructing drains, removing obstructions and laying out theoretical landing strips; in some instances hangars and roads were constructed and fencing completed.

Latest Airport Development

With the transition from the E.R.A. to the W.P.A.† the regulations for obtaining funds were revised to require municipal ownership of airports. The town of Conway was successful in purchasing the land which it had formerly leased, but Berlin, Keene and Winchester were unable to do this and consequently were not eligible for funds under this program. Because relief labor in Laconia and Portsmouth was absorbed in other activities and not available for airport work, neither city could take advantage of the Federal allotments. Only Concord, Conway, Manchester and Nashua were qualified to avail themselves of the opportunities offered by W.P.A.

The work accomplished under this program consisted of the improvement of landing areas, construction of additional hangars, hard surface runways and taxi-strips, the construction and installation of standard airport markers and wind directional indicators at all municipal fields, and a state-wide air marking program.

The surveying and mapping of all fields, whether privately or municipally owned or used by private or commercial aircraft, was brought up to date by the W.P.A. In conjunction with this project, emergency fields were located along the present airways. Due to the lack of co-operation by the towns concerned and the lack of sufficient funds to purchase these areas, this phase of the work was severely handicapped.

Since the completion of the W.P.A. airport program, very little construction work has been done at any of the New Hampshire fields. In general, expenditures have been for maintenance. The total expended under W.P.A. to date is $882,478.52.

Table III

TABULATION OF JOINT EXPENDITURES OF MUNICIPAL, STATE AND FEDERAL FUNDS FOR AIRPORT IMPROVEMENTS FROM 1933 TO MAY 31, 1940

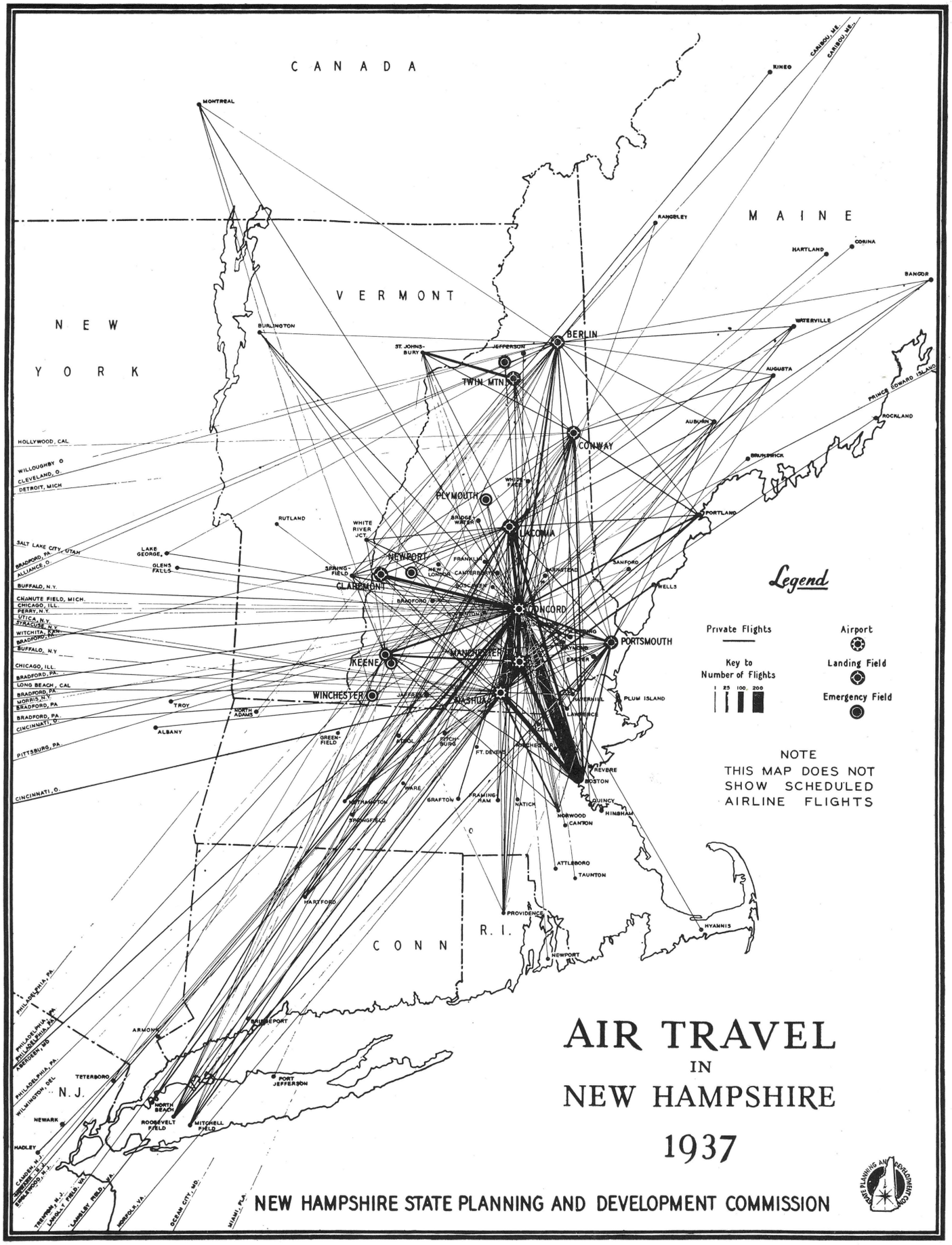
	C.W.A. Program	*E.R.A. Program*	*W.P.A. Program*	
Berlin	$16,424.17	$2,684.72	—	$19,108.89
Claremont	2,045.00	4,639.98	—	6,684.98
Concord	5,622.23	20,235.70	145,815.71	171,673.64
Conway	3,040.93	2,721.45	8,233.82	13,996.20
Keene	2,387.93	5,197.47	—	7,585.40
Laconia	—	25,285.62	—	25,285.62
Manchester	19,860.43	33,636.27	548,272.93	601,769.63
Nashua	1,780.80	41,096.86	141,386.19	184,263.85
Portsmouth	5,007.77	8,650.90	—	13,658.67
Winchester	—	2,951.04	—	2,951.04
Statewide	2,944.88	7,913.95	38,769.87	49,628.70
Total	$59,114.14	$155,013.96	$882,478.52	$1,096,606.62

Source: Division of Finance, Federal Works Agency, Work Projects Administration.

* Civil Works Administration.

** Emergency Relief Administration.

† Work Projects Administration.


CANADA
MAINE
VERMONT
NEW YORK
N. J.
CONN
R. I.
MONTREAL
RINEO
CARIBOU, ME.
RANGELEY
HARTLAND
CORINA
BANGOR
WATERVILLE
AUGUSTA
PRINCE EDWARD ISLAND
ROCKLAND
BRUNSWICK
PORTLAND
BURLINGTON
ST. JOHNSBURY
JEFFERSON
BERLIN
TWIN MTN.
CONWAY
AUBURN
HOLLYWOOD, CAL.
WILLOUGHBY, O.
CLEVELAND, O.
DETROIT, MICH.
PLYMOUTH
WHITE FARMS
BRIDGEWATER
LACONIA
RUTLAND
WHITE RIVER JCT.
SALT LAKE CITY, UTAH
BRADFORD, PA.
ALLIANCE, O.
LAKE GEORGE
GLENS FALLS
NEWPORT
SPRINGFIELD
CLAREMONT
FRANKLIN
NEW LONDON
CANTERBURY
MEREDITH
SANFORD
WELLS
BUFFALO, N.Y.
CHANUTE FIELD, MICH.
CHICAGO, ILL.
PERRY, N.Y.
UTICA, N.Y.
SYRACUSE, N.Y.
WITCHITA, KAN.
BRADFORD, PA.
BUFFALO, N.Y.
CONCORD
PORTSMOUTH
KEENE
MANCHESTER
CHICAGO, ILL.
BRADFORD, PA.
LONG BEACH, CAL.
MORRIS, N.Y.
BRADFORD, PA.
WINCHESTER
NASHUA
TROY
NORTH ADAMS
PLUM ISLAND
BRADFORD, PA.
CINCINNATI, O.
ALBANY
GREENFIELD
PITTSBURG, PA.
PEPPERELL
DITCHBURG
FT. DEVENS
LAWRENCE
REVERE
BOSTON
CINCINNATI, O.
WARE
GRAFTON
FRAMINGHAM
NATICK
QUINCY
HINGHAM
NORTHAMPTON
SPRINGFIELD
HORWOOD
CANTON
ATTLEBORO
TAUNTON
HARTFORD
PROVIDENCE
HYANNIS
NEWPORT
PHILADELPHIA, PA.
PHILADELPHIA, PA.
ABERDEEN, MD.
ARMONK
BRIDGEPORT
PHILADELPHIA, PA.
TETERBORO
WILMINGTON, DEL.
PORT JEFFERSON
NORTH BEACH
NEWARK
ROOSEVELT FIELD
MITCHELL FIELD
MADLEY
CAMDEN, N.J.
ATLANTIC CITY, N.J.
EGGERTSVILLE, N.J.
TRENTON, N.J.
LANGLEY FIELD, VA.
LANGLEY FIELD, VA.
NORFOLK, VA.
OCEAN CITY, MD.
MIAMI, FLA.
Legend
Private Flights
Key to Number of Flights
1 25 100 200
Airport
Landing Field
Emergency Field
NOTE
THIS MAP DOES NOT SHOW SCHEDULED AIRLINE FLIGHTS
AIR TRAVEL
IN
NEW HAMPSHIRE
1937
NEW HAMPSHIRE STATE PLANNING AND DEVELOPMENT COMMISSION

Present Status of Aeronautical Facilities

AIRWAYS

Just as ships must have a buoyed and lighted course for safe water navigation, aircraft likewise require a well marked and lighted route. To guide ships, radio stations and lighthouses are installed; for air navigation, radio range beacons and airway markers are provided. It is essential for safe operation that ports be situated on the ship's course. Similar facilities in the form of emergency landing areas are provided for air travel.

Civil Airways Lighting

Only the two Civil Airways which cross New Hampshire are completely lighted. On the state's most important route, that used by the Boston & Maine-Central Vermont Airline, in its flight from Boston to Montreal, designated as Blue Civil Airway No. 4, are rotating beacons located in relation to the airports, providing a light at intervals of approximately fifteen miles. Rotating beacons were installed in the towns of Windham, Hooksett, Webster, Wilmot and Plainfield; a flashing beacon was erected on Mt. Kearsarge. An airway beacon at the Portsmouth airport lights the New Hampshire portion of the Boston-to-Caribou route, designated as Amber Civil Airway No. 7. The route from Concord, N. H., to Portland, Me., has been designated as Red Civil Airway No. 8.

Two-way Radio Communication

The Boston & Maine-Central Vermont Airline operates and maintains a two-way radio airline communication station at Concord and Manchester. These stations are used not only for airline operations, but also for traffic control over the Civil Airways flown by the company. Today, complete and detailed weather reports are available to any pilot contacting either of those airports by telephone. The Civil Aeronautics Board weather reporting station at Concord maintains 24-hour watch on the regular aviation radio wave bands.

Radio Aids to Navigation

From Concord, a 15-watt radio range beacon, operating on a frequency of 251 kilocycles, serves Blue Civil Airway No. 4. One leg of this beam has been placed directly on the airport's runway to guide incoming ships. The southeastern leg of the beam is used by planes flying into Concord from Boston; this beam intercepts the northwestern leg of the beam from the Boston airport approximately at Manchester. The western leg of the beam guides ships into Concord from the general direction of Albany, New York; the eastern leg of the beam guides planes from the general direction of Portland, Maine. The radio range beacon at East Boston has two beams focused on New Hampshire, one on the Boston-Manchester route, the other on the Boston-Portsmouth-Portland route. The radio range station at Concord, constructed with the aid of Federal funds, was sold to the Federal Government for a nominal sum.

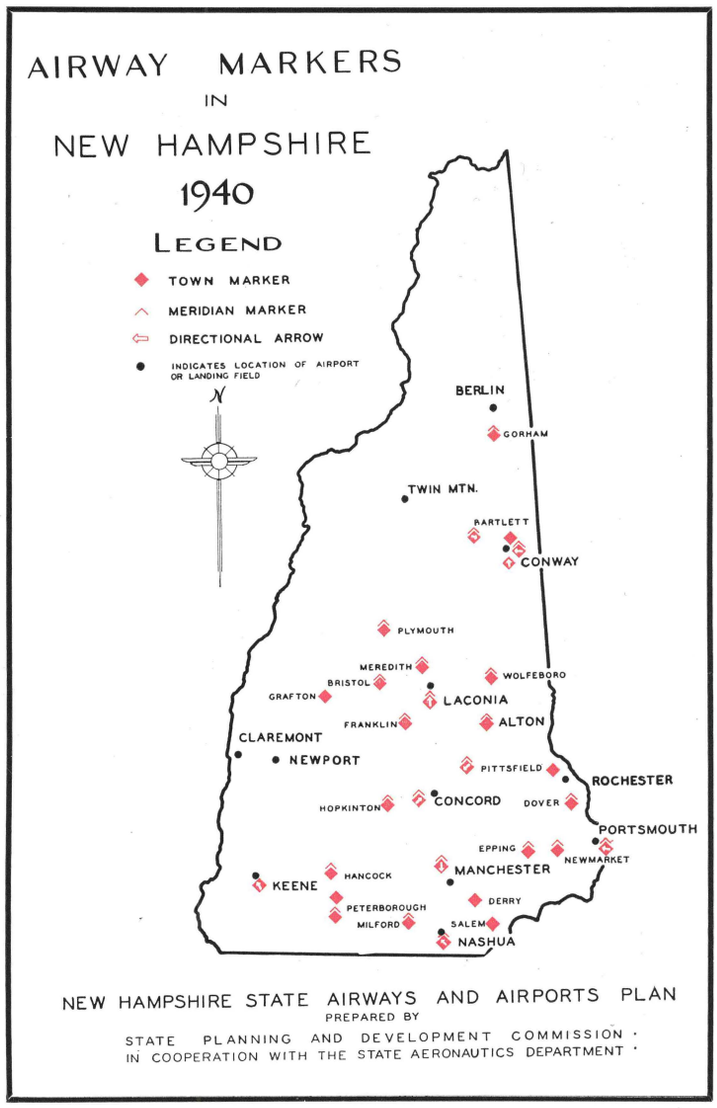
Airway Marking

To assist the sportsman pilot, the student, and others flying off established routes, a nationwide air marking program was sponsored by the Bureau of Air Commerce. Under a W.P.A. project sponsored by the Public Works Division of the State Comptroller's Office, markers were painted on the roofs of prominent buildings throughout the state. An effort was made to locate both meridian markers, which consist of the name of the town and an arrow pointing true north, and directional arrows which point to the nearest airport, on the routes likely to be followed by aircraft. Air markers exist as shown in the table.

Table IV
AIR MARKERS IN NEW HAMPSHIRE

Name	*Location*	*Meridian Marker*	*Directional Arrow*
Alton Bay	Town (Pavilion)	Yes	None
Bartlett	Town (Freight House)	Yes	Conway—8 miles
Berlin	Airport (Hangar)	Yes	None
Bristol	Town (Factory)	Yes	None
Claremont	Airport (Hangar)	Yes	None
Concord	Airport (Hangar)	Yes	None
Concord	City (Garage)	Yes	Concord—1 mile
Contoocook	Town (Cov'd Bridge)	Yes	None
Conway	Town (Freight House)	None	Conway—3 miles
Derry	Town (Freight House)	None	None
Dover	City (Passenger Shed)	Yes	None
Elmwood Jct.	(Passenger Station)	Yes	None
Epping	Town (Freight House)	Yes	None
Franklin	Town (Garage)	Yes	None
Gorham	Town (Freight House)	Yes	None
Grafton	Town (Freight House)	None	None
Keene	Airport (Hangar)	Yes	None
Keene	City (Gas Tank)	None	Keene—3 miles
Laconia	Airport (Hangar)	Yes	None
Laconia	City (Freight House)	Yes	Laconia—1 mile
Manchester	Airport (Hangar)	Yes	None
Manchester	City (Freight House)	Yes	Manchester—4 miles
Meredith	Town (Freight House)	Yes	None
Milford	Town (Freight House)	Yes	None
Nashua	Airport (Hangar)	Yes	None
Nashua	City (Freight House)	Yes	Nashua—2 miles
Newport	Airport (Hangar)	Yes	None
No. Conway	Airport (Hangar)	Yes	None
No. Conway	Town (Pk. Grass Plot)	None	None
Peterborough	Town (Storehouse)	Yes	None
Peterborough	Town (Town Hall)	None	None
Pittsfield	Town (Factory)	Yes	Concord—11 miles
Plymouth	Town (Passenger Sta.)	Yes	None
Portsmouth	City (Freight House)	Yes	Portsmouth—2 miles
Redstone	Quarry (Stone Shed)	Yes	Conway—1 mile
Rochester	City (Freight House)	None	None
Rocking'm Jct.	(Passenger Shed)	Yes	None
Salem	Town (Water Tower)	None	None
Winchester	Airport (Clubhouse)	Yes	None
Wolfeboro	Town (Laundry Bldg.)	Yes	None

On all markers, the initials "NH" follow name of town or city.
Directional arrows include the distance to the airport.



LANDING AREAS

The Committee has given close attention to the status of ground facilities in New Hampshire. Of the twelve areas which were registered in 1939, only three had hard surface runways, Concord, Manchester, and Nashua. At each of these fields, adequate taxiways and aprons are constructed between buildings and runways.

Storage and Service Facilities

Facilities for storage of aircraft vary throughout New Hampshire from a single wooden hangar which is 30′ x 40′ to such adequate facilities as are found at the Manchester port, which has a steel hangar 80′ x 84′ with a 14′ overhead clearance and a steel and brick hangar 100′ x 100′ with an overhead clearance of 20′ 6″. There are also hangars at Berlin, Claremont, Concord, Conway, Keene, Laconia, Newport and Portsmouth.

At Concord there is an approved repair station for the servicing of planes, but only minor repairs can be made at the Conway, Manchester and Nashua airports. At most fields service is on call from the nearby city, however, and it is possible to secure gas and oil servicing at Claremont, Concord, Conway, Manchester, Nashua, Newport and Portsmouth.

Airport Lighting

At the Concord, Manchester and Nashua airports, there are the essential boundary, range and obstruction lights, a lighted wind cone and rotating beacon. A ceiling projector, necessary for determining cloud height at night, was installed at Concord. Although Portsmouth lacks boundary lights, it has a rotating airway beacon adjacent to the field and a lighted wind cone.

Inland Water Areas

The large number of lakes, ponds and rivers in New Hampshire afford excellent landing places for seaplanes. It is interesting to note that while there were only twelve airports registered in New Hampshire in 1939, there were twenty-nine water landing areas. Three seaplane ramps are in use on Lake Winnipesaukee, at The Weirs, Alton Bay and Wolfeboro, where adequate landing facilities are provided.

Ice Areas

In the winter many of these bodies of water can be used for landing of planes although only four such areas were registered in 1939.

New Hampshire's Air Transportation Requirements

NEED FOR PLANNING

The development of air transportation in New Hampshire is yet in its early stages, and if guided by a comprehensive plan, it will be possible to avoid the needless waste and mistakes made in the haphazard development of other systems of transportation. A definite program will permit the state to capitalize upon the great potentialities of air travel.

A plan for the future aeronautical development is necessary for several reasons. First, because of the unfavorable physical conditions in this section of the country; second, because of the number of different agencies participating in the development; third, to encourage sound airport and airway development.

Difficult Climatic and Topographic Conditions

There are few states in the country where such difficult conditions of climate and terrain must be overcome to insure safe flying operations and uninterrupted schedules. Due to the rapidly changing weather, intermediate fields must be constructed and exact data on field conditions must be made available. Coastal fog, mountain storms, winter snows and muddy fields in the spring and fall allow only a few months in the summer when the visiting flyer can travel over the state freely without first obtaining detailed information on field and weather conditions.

The topography of the state results in a scarcity of natural landing areas. The peculiarities of terrain and the prevailing types of New Hampshire farming make it necessary in practically all sections of the state to construct landing fields. The largest level places, low intervale land along the river valleys, are either wet most of the year or under cultivation during the summer. Other flat areas which are high and dry are either wooded or subdivided into small fields separated by stone walls and fences; their value as farm land prevents their use as landing fields. The lack of natural areas makes the construction of these facilities imperative to the proper development of aviation.

Need for Coordination

The development of aeronautical facilities in New Hampshire has been the composite result of activity by the federal, state and municipal governments and many private agencies. For the most part each has worked independently, and while there has been no desire on the part of any to go counter to the plans of another, yet the lack of a single unified program, at least tentatively agreed upon, has prevented these agencies from working in unison towards their common objective—the best possible development of air transportation in New Hampshire.

Interstate Cooperation

New Hampshire comprises a relatively small section of New England. A fast modern ship can cross the state in less than an hour. At present there is no passenger service entirely within the state; the commercial airline operating in New Hampshire has its terminals in two other states. Persons using this line go to and come from other states and regions. At present a large proportion of air traffic, both passenger and freight, at municipal airports is interstate in character. This illustrates rather effectively the importance of New Hampshire's co-operating with other states and regions in planning for future aeronautical development.

The New England Regional Planning Commission, in preparing the New England Airways Plan, accepted the program of the New Hampshire Advisory Committee, to guide the future development of this region. This is a valuable aid in co-ordinating the separate programs of the six New England states.

National Planning

Planning airport development for the country as a whole is a designated duty of the Civil Aeronautics Board. This Board is preparing a nationwide airport program which will provide adequate landing facilities for air navigation in all parts of the country. The material which has been secured and embodied in this report has already been submitted and utilized by this federal agency in the preparation of its program, thereby insuring that the development of facilities under Federal programs will produce results of greatest value to New Hampshire.

Sound Airport and Airway Development

The future development of aviation in New Hampshire will depend largely upon the type and location of airports, landing facilities and air navigation aids which are established. The history of airport growth throughout the country shows that in the past sites have not always been selected with sufficient consideration of the larger, higher speed airplanes which are coming into use. Extensions in the size of the landing areas have been costly, and in some cases impossible. As a result airports have had to be abandoned at a great financial loss, and new sites purchased and developed. The guidance of a sound long-range plan will help to insure the proper type and location of airports and landing fields and the adequacy of these facilities as an integrated air transportation system.

PRESENT AND FUTURE NEEDS

There has probably been no greater drawback to more general use of aircraft in this state than the lack of stability of landing facilties. One year a field is safe and usable, the next it may be under cultivation. With the exception of a few airports, there has been a general lack of confidence that landing areas will be found in good condition.

The greatest need of aviation in New Hampshire is the establishment of a state airways system, which will provide safe flying routes equipped with such facilities as markers, lights, and auxiliary fields for emergency landings. At present many unsafe areas are not marked and more auxiliary fields have long been needed. Whereas the development of an airport is expensive, a slight amount of clearing, fencing and marking will provide an adequate auxiliary landing area.

Such an airways system should not only facilitate increased flying activity in the state, but should also bring air transportation to a much larger proportion of the state's area. The studies which have been made prove that service should be provided to many localities.

This proposed system should include all landing areas; moreover, it should insure uniformity in design, adequate marking and lighting, and guarantee the maintenance of all landing areas in a usable condition.

Consideration for Future Development

A plan for New Hampshire aviation must be conceived in terms of scheduled air carrier operations and take into consideration the existing and prospective requirements of all kinds of private and commercial flying. Although it is not possible to predict the exact form of the future growth of aviation in New Hampshire, it is reasonable to foresee that all types of flying activity will steadily increase.

Scheduled Interstate Operations

The most important airway in New Hampshire will undoubtedly remain the route of the present Boston & Maine Airways. Planes flying the Boston-Bangor route do not land in this state, but the airway is of great potential importance to the state for it is reasonable to expect that a regular stop in the seacoast region, logically at Portsmouth, will be included. The other airway flown by this company is very important to the state. An additional stop in the Hanover-Lebanon area and an extension of this service into the recreational regions of the lakes and the White Mountains may be expected.

Other scheduled operations which can be anticipated are a cross-state route from Albany, N. Y., to Portland, Me., and another from New York City up the Connecticut River Valley. The establishment of these routes will depend upon the airports, lighting and marking which are provided.

Southern New Hampshire airports may be alternative landing places to which the flights of both transcontinental and trans-Atlantic airlines could be directed when storms or fog along the coast prevent the attainment of scheduled terminals.

The development of the principal airports as recommended hereinafter, with 3500′ x 500′ landing strips, should be adequate for all types of aircraft likely to be used in this state.

Non-Scheduled Interstate Operations

The non-scheduled interstate flying activity will probably continue to consist largely of private and commercial travel into the state to the vacation areas and to the industrial centers. Recreation will exercise considerable influence on New Hampshire aeronautical development. If favorable landing facilities are available in winter, a large volume of non-resident air travel to the resorts can be expected just as in summer. Because aviation is the most rapid medium of transportation, it has brought New Hampshire within commuting distance of the large eastern cities.

There has been an increase in flying by private concerns for business executives during the past few years; this has been especially true at Manchester and Concord. It is probable that products relatively light in weight and of high unit value will be distributed by air express.

All airports, landing and auxiliary landing fields which have been suggested for development could be used by all planes employed in these operations.

Scheduled Intra-State Operations

Looking forward to the time when all cities and principal towns will be served by airmail and passenger service, it is likely that only the larger cities will be stops for the major airlines. The smaller communities will be connected to the terminals by local service and airline feeder service. This would be seasonal in the

recreational regions, but should be year-round to the industrial and commercial centers.

Non-Scheduled Intrastate Operations

In general, the non-scheduled flights in New Hampshire will be similar to the non-scheduled interstate operations, consisting chiefly of private flying. Local flying and charter service comprise a large part of the commercial activity in the scenic and recreational areas. Such miscellaneous activities as aerial photography, aerial advertising, air meets, emergency flights and army maneuvers will take place in New Hampshire.

It has been shown that the development of a landing area stimulates private and commercial flying in the locality, therefore such stimulus can be an expected result of this program. Not only will it be possible to have a field within a short distance of every resident, but a large number of fields distributed over the state will open numerous sections to air travel.

New Hampshire offers exceptional opportunities for the use of seaplanes, and it must be expected that coming years will see a substantial increase in the use of such craft. There are some 1300 bodies of water wholly or partly within the boundaries of the state. Many of these provide fine areas for the landing and take-off of seaplanes, and ample taxiing space. Other bodies of water are not spacious enough to be regularly used by seaplanes but do provide emergency landing areas.

Use of Inland Water Areas

Since it is not possible to mark the large number of such water bodies in the state for seaplane use, pilots unfamiliar with the navigation conditions of particular lakes, ponds, or rivers should not attempt to use them without obtaining information regarding the area. Natural or artificial obstructions, totally or partially submerged, may be a source of danger, and it must be borne in mind that boat traffic of all types is very heavy throughout the state.

Use of Ice Areas

The use of ice areas for landing fields has been increasing rapidly among private pilots. Great caution must be observed in such use because frozen lakes present great numbers of moving objects—automobiles, iceboats, and people. Examples of stationary objects are fishermen's houses and parked cars. Although flags by day and flares at night sometimes indicate areas in use by planes with or without ski equipment, care is essential because changing ice and snow conditions seriously affect the safety problem in a short time.

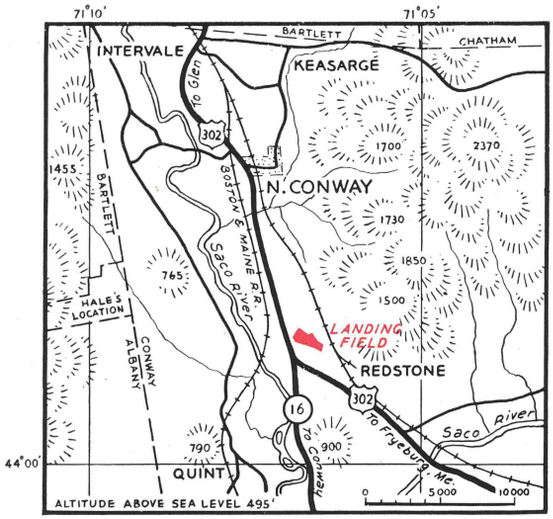
Student Flying

As one of the responsibilities of the Civil Aeronautics Board is to further aviation in the interests of national defense, the Board has begun a system of land and seaplane pilot training for college and non-college civilians. During the school year 1939-1940 over nine thousand students of several hundred colleges received ground instruction in the theory of flight and actual flying experience. In New Hampshire, only St. Anselm's College participated in the civil pilot training program; twenty-one students were enrolled. At Concord, fifty registered in the ground school for non-college students; ten flight scholarships were awarded.

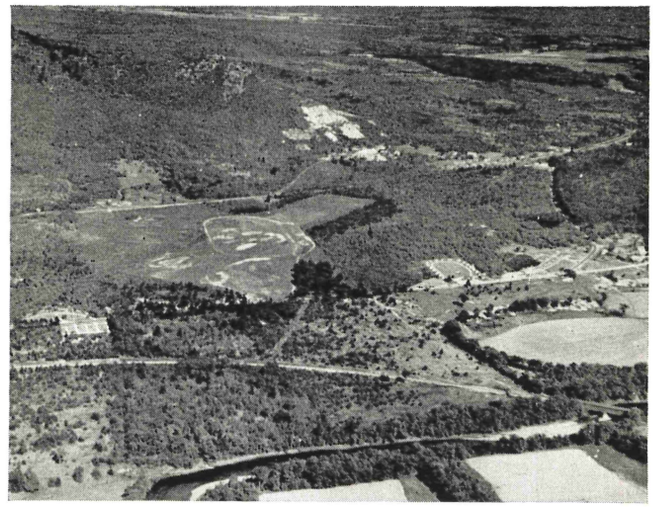
Student flying and aeronautical education is expected to be a principal subject in the secondary school curriculum and in youth organizations as well as in adult education. Student pilots will probably increase in number as subsidies in the form of federal aid are extended.

Eliot F. Noyes

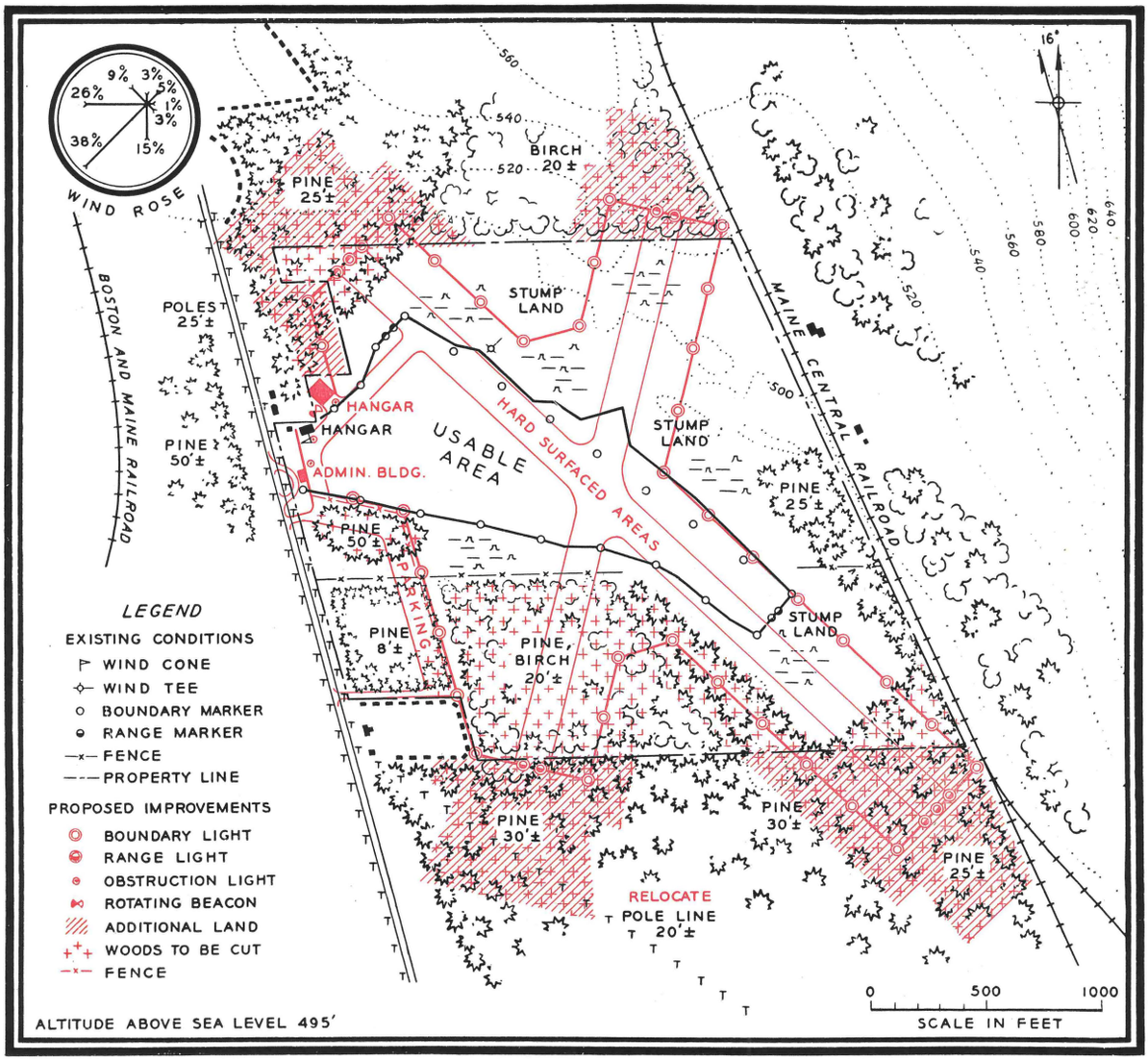
The topography in some parts of the state is favorable to the condition required for gliding and soaring. The above photograph shows a sailplane which attained an altitude of 6500 feet above the point of release from the towing plane.



AIRPORT LOCATION MAP



OBLIQUE AERIAL PHOTOGRAPH Bernice Perry



NORTH CONWAY LANDING FIELD

NEW HAMPSHIRE STATE AIRWAYS AND AIRPORTS PLAN

A Plan for Present and Future Development

RECOMMENDATIONS

The plan submitted herewith by the Advisory Committee proposes aeronautical facilities adequate for air transportation service to the entire state and useful for national defense purposes, and provides for the carrying out of the plan through the Director of Aeronautics. The Advisory Committee makes the following recommendations which it believes will assist the Director in carrying out this program:

1. **A state airways system inclusive of and supplementary to the present Federal Airways System should be established, as authorized by the Legislature in 1939.** Such a system should include all facilities of the Civil Airways except those provided and maintained by the Civil Aeronautics Board. All public landing areas, airport marking, lighting and radio communication equipment should be included. The airports should serve the industrial and recreational centers; the landing fields should serve the smaller communities and vacation areas; the intermediate fields should serve the various airways and small towns.

2. **Landing and navigational facilities to serve the state airways system should be developed,** in accordance with a long-range program to insure maximum benefits at the most economical expenditure. The specific locations and types of airports recommended are shown on the plan which accompanies this report and are listed on page 20, arranged in priority groups in order of their approximate importance to the state aeronautical development plan. On pages 30 and 31 the cost of such a development program over a five-year period is estimated. The costs of development should be met by a program of federal, state and local participation as outlined in detail on page 22.

3. **Federal, state and municipal airport development programs should be co-ordinated by the State Director of Aeronautics to insure the execution of a comprehensive long-range development plan.** This plan should be reviewed and approved by all agencies having jurisdiction over aeronautical development.

4. **Every community in the state should consider its relationship to the state airport development plan recommended herein, and where aviation facilities are justified, should co-operate with the State Director of Aeronautics in preparing detailed plans and carrying out the development.** In some instances several communities should co-operate in the establishment of combined facilities rather than undertaking individual facilities which might be inadequate.

5. **The Director of Aeronautics should co-ordinate the development of airports and landing fields in New Hampshire with the plans of adjoining states in order to prevent wasteful duplication of such facilities along state boundaries and should have authority to carry out such co-operative arrangements with the proper agencies of adjoining states.**

6. **Plans for development of the state highway system should be studied with regard to adjustments necessary to provide adequate access to all landing areas in the state airport development plan.** In some instances it may be possible to provide emergency landing areas in close conjunction with the highway system.

← Plans similar to the one on the opposite page have been prepared for many of the airports and landing fields of the state, and others are being prepared. Each plan includes an airport location map, an aerial photograph of the field and a detailed map of existing conditions and proposed improvements. The plans are being turned over to the State Director of Aeronautics for use in development work and as the basis for records on each location.

CONSTRUCTION AND MAINTENANCE OF AERONAUTICAL FACILITIES— A PUBLIC FUNCTION

Aviation facilities must be regarded as an integral part of the general transportation and distribution system, to be constructed and maintained by public funds just as bridges and roads are provided for our highways, channels and anchorages for our waterways. Private enterprise cannot profitably establish and operate all these facilities.

A close analogy can be made between air transportation and water transportation. The channels and anchorages for safe and convenient arrival, discharge and departure of ships are comparable to the landing areas and runways constructed at airports for the same purposes.

Harbor lights and buoys may be compared with airport lighting and marking; aids to water navigation such as lighthouses, buoys and radio stations are similar to airway lighting, marking and radio communication.

All navigable rivers, harbors and seas are under public jurisdiction, free and open to all who may wish to use them under prescribed regulations; likewise, the airways and airports may be used by those who comply with similar rules.

In both systems of transportation, the terminal facilities consisting in the one case of docks, warehouses, etc., in the other of hangars, repair shops, etc., may be either privately or publicly owned. Public ownership has been justified on the basis of subsidies to stimulate activity. It is expected that public ownership will continue to extend at least to administration buildings and passenger facilities which are for the use of the general public; whereas, hangars, repair shops and factories are likely to be privately owned and operated.

To carry the analogy further, the distribution of functions and costs in the construction and maintenance of facilities in the two systems is comparable. The Federal Government maintains lighthouses, buoys and other aids to water navigation; these serve a function similar to the light beacons, air markers and radio stations which are located on the Civil Airways. The state installs and maintains lights and buoys on the inland waters; it is expected that corresponding facilities on the intrastate air routes will be provided by the state. Harbors have been developed chiefly by municipalities, as have landing fields. Here, the terminal facilities have been either privately owned and operated, or publicly owned and managed to stimulate commercial activity.

In general, in air, water and highway systems of transportation, the Federal Government has assisted either directly, or indirectly, by means of aid in the construction and maintenance of those facilities essential to interstate commerce. In the case of highways, the greatest amount of Federal aid has been received for roads of interstate importance, whereas, highways primarily of state importance have been supported by state and local funds. Similarly in air transportation, the greater amount of Federal assistance can be anticipated on the interstate airways; the state and municipalities will finance the intrastate air routes.

PRIORITY OF DEVELOPMENTS

In view of the fact that none of the existing airports in the state is considered entirely satisfactory for present needs and with the prospect of larger and faster planes, and the constantly increasing requirements of the Civil Aeronautics Board, the Committee has recommended the expansion and improvement of existing facilities and the establishment of new facilities at airports. It has also suggested that new landing fields, additional airports and intermediate fields be constructed on the state airways. It is logical that these proposed and existing areas be classified in related groups according to their importance and need for development. The priority groupings recommended are listed below.

PRIORITY GROUPINGS OF AIRPORTS, LANDING FIELDS, AND AUXILIARY FIELDS

In Order of Their Importance to the Development of Air Transportation in New Hampshire

(Listing in each priority group is in alphabetical order)

First Priority Group

Concord Municipal Airport
Conway-White Mountain Municipal Airport
Hanover-Lebanon Municipal Airport (Proposed)
Laconia Municipal Airport
Manchester Municipal Airport

Nashua Municipal Airport
Portsmouth Municipal Airport
Whitefield Municipal Airport (Proposed)

Second Priority Group

Claremont Municipal Airport
Franconia Municipal Auxiliary Field (Proposed)
Hampton-Seabrook Municipal Airport (Proposed)
Keene Municipal Airport (Proposed)
Peterborough Auxiliary Field (Proposed)
Rye Military Auxiliary Field (Proposed)
Tri-City Municipal Airport (Proposed)
Wolfeboro Municipal Airport (Proposed)

Third Priority Group

Berlin Municipal Airport
Keene Municipal Auxiliary Field
Keene-Pierce Auxiliary Field
Newport Auxiliary Field
Twin Mountain Auxiliary Field
Winchester Auxiliary Field (Proposed)

Fourth Priority Group

Andover Landing Field (Proposed)
Canaan Auxiliary Field (Proposed)
Colebrook Auxiliary Field (Proposed)
Errol Auxiliary Field (Proposed)
Freedom Auxiliary Field
Haverhill Auxiliary Field (Proposed)
Hillsborough Auxiliary Field (Proposed)
Lincoln-Woodstock Auxiliary Field (Proposed)
New Durham Auxiliary Field (Proposed)
Pittsburg Auxiliary Field (Proposed)
Plymouth Auxiliary Field
Raymond Auxiliary Field (Proposed)
Sandwich Auxiliary Field (Proposed)
Stratford Auxiliary Field (Proposed)
Warren Auxiliary Field (Proposed)

Primary Airports

The Committee believes that all New Hampshire cities should have airports. The existing airports at Concord, Laconia, Manchester, Nashua and Portsmouth should be developed further. At present Concord and Manchester are regular stops for transport planes flying Blue Civil Airway No. 4—Boston to Montreal. Portsmouth, an auxiliary field, may be a future stop on Amber Civil Airway No. 7—Boston to Caribou, Maine. It can be expected that Nashua eventually will have year round airmail and passenger service by regular airline or feeder service. Laconia will be served in the summer months by similar service. An increase in winter sports is likely to bring year round travel to this city. The construction of a field at Franklin is not contemplated because the Laconia airport is sufficiently near to afford adequate facilities.

Keene is the hub of the southwestern section of the state and a growing industrial center, therefore an airport should be developed here as a stop on the Albany, New York, to Portland, Maine, airway. Berlin should be served by the Whitefield airport for airline service and the existing airport should be maintained for local and private use. A tri-city airport is suggested for the Dover-Rochester-Somersworth region.

It is proposed that an airport be constructed in the Hanover-Lebanon area to serve the county seat and Dartmouth College. It would undoubtedly be included as a stop on Blue Civil Airway No. 4. The Committee also suggests that a municipal field be developed at Whitefield, and that the Conway Airport be improved; both of these landing fields should be units of the state airway system. Conway, in the center of the White Mountains, is an important vacation and sports center.

Secondary Airports

The landing fields at Claremont and Peterborough should be improved to accommodate local and airline planes, for these two towns will have airmail and passenger service at some later date. Claremont is an especially important trading center; Peterborough, in the Monadnock Region, will be a valuable intermediate field for planes flying the Albany-Portland Airway.

It is recommended that a field be built at Franconia for the use of summer residents and winter sports visitors to the Franconia-Sugar Hill area. At Wolfeboro land plane facilities should be provided and the seaplane ramp enlarged.

An additional airport and a seaplane ramp to serve the Hampton-Seabrook area should be built for the use of summer vacationists in the Seacoast Region. A military field in conjunction with the Rye Harbor development should be established for the New Hampshire National Guard. It is possible that private and local aircraft will use this area; a limited amount of commercial activity would exist under supervision of the National Guard authorities.

Auxiliary Fields

Although airline service cannot be anticipated at the Berlin Municipal Airport, Keene Municipal Auxiliary Field, Keene-Pierce Auxiliary Field, Newport Auxiliary Field, Twin Mountain Auxiliary Field, and Winchester Auxiliary Field (Proposed), the local use of these fields is sufficient to justify maintaining these areas in proper condition.

Intermediate fields located at Canaan, Colebrook, Errol, Freedom, Haverhill, Hillsborough, New Durham, Pittsburg, Plymouth, Raymond, Sandwich, Stratford and Warren and in the Lincoln-Woodstock area should meet the need of the towns in which they are situated. The proposed Andover intermediate field would serve planes using Blue Civil Airway No. 4 between Concord and White River Junction.

PARTICIPATION IN DEVELOPMENT, OPERATION AND MAINTENANCE

Federal Participation

It is expected that the Federal Government will continue through the Civil Aeronautics Board to construct, operate and maintain intermediate fields, airway light beacons and radio aids to air navigation on the Civil Airways. Since the Board will maintain the airway beacons and the radio range station on the Blue Civil Airway at Concord, it is recommended that land in the town of Andover be acquired and an intermediate field established and maintained by Federal funds. Through various work programs, Federal funds have been available for the construction and improvement of airports; it is reasonable to expect that such projects will be continued.

State Participation

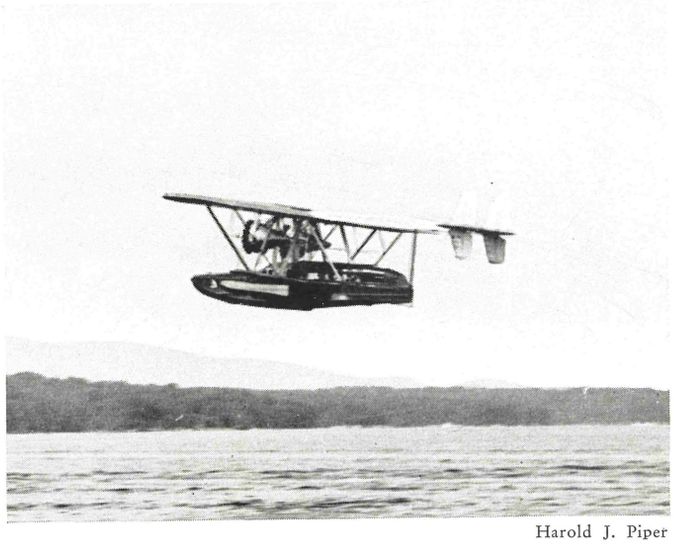
The Director of Aeronautics should co-ordinate the programs of the different agencies participating in the development of aeronautical facilities in New Hampshire. This administrator should take the initiative in planning and executing the individual developments. Under supervision of the Director should come the acquisition, construction and maintenance of all airports and facilities primarily of state importance. The Director should be responsible for all existing and future landing areas and all markings.

Municipal Participation

The municipalities should acquire, construct and maintain all airports and landing fields primarily of local importance, under the direction of the Director of Aeronautics.

Financing

Federal assistance can be anticipated in the construction of all publicly owned facilities; the amount of aid is contingent upon the future Acts of Congress. In the past, the Federal Government has appropriated approximately 80% of the funds expended; it is possible that aid will continue at that rate. In financing the future development for New Hampshire, it is recommended that the state participate to the extent of providing the necessary technical and engineering supervision. The municipalities should furnish the balance by supplying a portion of the funds or its equivalent in labor, materials and equipment. In the case of state owned fields, where such may be desirable, the state and the Federal governments should jointly contribute and the municipalities should make available the land needed for the development of adequate facilities. Permanent and adequate maintenance of aeronautical facilities must be provided so that they are not completely dependent on local taxation. Airport and airway maintenance, at least in the case of operations having state-wide significance, should become a state function, as much so as a highway program.



Harold J. Piper

New Hampshire's lakes offer exceptional opportunities for the use of seaplanes. The photograph shows a twin-motored Sikorsky taking off from Lake Winnipesaukee.

EXISTING PUBLIC AIRPORT FACILITIES OF NEW HAMPSHIRE - 1940 DATA*

BERLIN

Name: Berlin Municipal Airport.
Class:
Municipal.
Owner, Brown Company, Berlin, New Hampshire.
Leased to, City of Berlin.
Manager, John E. West.
Position:
Lat., 44°32′; long. 71°10′; elevation, 1,100′.
Distance and direction from city, four miles north of City Hall, between east side Highway No. 16 and Androscoggin River, in town of Milan.
Description:
Size, Usable Area, 1,850′ x 175′; Property, 38 acres; Shape, irregular.
Surface, sod; Gradient, level; Drainage, natural.
Landing strip, 1,850′ x 175′ NW/SE.
Marking thereof, boundary and range markers.
Obstructions:
Hills to E and W; River to E, N, and S.
Marking and Identification:
Name on hangar, "Berlin, N. H." and north arrow, painted on roof.
Wind-direction indicator, cone on hangar.
Accommodations:
Personnel for servicing, on call from city.
Hangars, one, metal 50′ x 60′; 12′0″ overhead clearance.
Administration building, small office.
Repair facilities, from city.
Specification fuel and oil, from city.
Guard, from city.
Quarters, in city; meals, in city.
Transportation to city, taxi.
First aid, from city.
Meteorological Data:
Prevailing winds, all seasons NW/SE, due to topography.

CARROLL

Name: Twin Mountain Auxiliary Field.
Class:
Commercial.
Owners, Mrs. P. Houghton, John L. Houghton, E. Houghton.
Manager, John L. Houghton.
Operator, Lee Bowman.
Position:
Lat. 44°16′; long. 71°33′; elevation, 1,440′.
Distance and direction from town, ½ mile W of Twin Mountain; Boston & Maine Railroad tracks and Ammonoosuc River on N; Highway No. 3 adjacent to area.
Description:
Size, Usable Area 1,900′ x 300′; Property, 50 acres; Shape, rectangular.
Surface, turf; Gradient, level; Drainage, natural.
Landing strip, 1,900′ x 300′ EW.
Obstructions:
Group of overnight camps at NE corner; buildings on NW corner; wooded pasture and hill on S.
Marking and Identification:
Wind-direction indicator, cone at NE corner of field, near overnight camps.
Accommodations:
Personnel for servicing, summer only.
Administration building, office in overnight camp.
Repair facilities, summer only.
Specification fuel and oil, yes.
Guard, summer.
Quarters, overnight camps; meals, at camp in summer.
Transportation, taxi—town within walking distance of field.
Communication and Signal Equipment:
Telephone.
Meteorological Data:
Prevailing winds, summer SW; winter W and SW; annual, SW.

* Private fields not included.
U. S. Weather Bureau Station, Concord, New Hampshire.
Nearest upper air observer, East Boston Airport, Massachusetts.

CLAREMONT

Name: Claremont Municipal Airport.
Class:
Municipal.
Owner, Town of Claremont.
Operator, Spooner Air Service.
Manager, E. H. Spooner.
Position:
Lat. 43°22′; long. 72°22′; elevation, 520′.
Distance and direction from town, 1½ miles due W of business section, 2½ miles SE of confluence of Sugar and Connecticut Rivers.
Description:
Size, Usable Area, 2,500′ x 1,200′; Property, 70 acres; Shape, irregular.
Surface, sandy; Gradient, slight slope to W; Drainage, excellent natural.
Landing strip, 2,300′ x 300′–600′ E/W.
Marking thereof, boundary and range markers.
Obstructions:
Hill to N; Hangar to N; Trees S and NE; Ski jump to NE.
Marking and Identification:
Name on hangar, "Claremont, N. H." and north arrow, painted on roof.
Wind-direction indicator, cone on hangar and on ski jump on NE.
Accommodations:
Personnel for servicing, yes.
Hangars, one, steel and wood, 50′ x 60′; 20′ overhead clearance.
Administration building, office in hangar.
Repair facilities, yes; spare parts, a few.
Specification fuel and oil, yes.
Guard, yes; fire apparatus, hand extinguishers.
Quarters, in town; meals, in town.
Transportation to town, yes.
First aid, in town.
Communication and Signal Equipment:
Telephone.
Meteorological Data:
Prevailing winds, summer, S; winter, NW; annual, NW and S.
Heaviest winds are usually from the N or NW. Winds of 40 m.p.h. or over are recorded, on the average, 5 or 6 days per month, January-April, incl., and infrequently, May-December, incl. Highest recorded velocity is about 50 m.p.h. Dense fog occurs about 2 or 3 days per month during August-October, incl., and one day or less per month during rest of year. Light fog occurs, on the average, 5 or 6 days per month during the late summer and autumn months and one or two days per month during rest of year. Most fogs occur in early a.m., except in winter, when frequent evening and all-day fogs are also observed.
Precipitation as heavy as 1″ or more in 24 hours is recorded one day or less per month, with greatest frequency in spring and least in winter. Average monthly snowfall, December-March, incl., is about 15″, and for the months of April, May, and November, about 6″.
Remarks:
Ascutney Mt., 6 miles NW of field, can be seen for many miles.

CONCORD

Name: Concord Municipal Airport.
Class:
Municipal.
Owner, City of Concord.
Operator, Concord Airport Commission.
Manager, W. E. Martin.
Position:
Lat. 43°12′; long. 71°30′; elevation, 335′.
Distance and direction from city, approximately one mile E.
Description:
Size, Usable Area, 150 acres; Property, 250 acres; Shape, irregular.
Surface, turf; Gradient, level; Drainage, natural and artificial.
Landing strips, 3: N/S 2,500′ x 500′; E/W, 2,400′ x 500′; NW/SE 2,600′ x 500′.
Hard Surface Runways, 2: 2,000′ x 100′ NW/SE; 2,200′ x 100′ E/W.
Marking thereof, boundary and range markers.
Obstructions:
40′ trees and 30′ power line on W side; trees to SW; 50-foot antenna poles adjacent to administration buildings; radio range poles, 2 miles SE; lighted.
Lighting, all obstructions within 15 to 1 ratio of usable area.
Marking and Identification:
Name on hangar, "Concord, N. H." and north arrow, painted on roof.
Wind-direction indicator, lighted cone on hangar.
Lighting:
Beacon, standard airport beacon.
Boundary lights, yes.
Approach lights, yes.
Other lighting, obstruction lights and ceiling projector.
Accommodations:
Personnel for servicing, yes.
Storage rates, $1 to $3 per night; $15 to $40 per month.
Hangars, two: one wood 60′ x 60′; one cement and steel 80′ x 100′.
Administration building, complete facilities.
Repair facilities, approved repair station.
Specification fuel and oil, yes.
Guard, yes; fire protection, hydrant and small hand extinguishers.
Quarters, in city; meals, in city.
Transportation to city, yes.
First aid, in city.
Communication and Signal Equipment:
Telephone.
Radio, Boston & Maine-Central Vermont Airline Radio Station. C.A.B. radio range station, 24-hour standby service; C.A.B. teletype.
Meteorological Data:
Prevailing winds, summer SE; winter, NW; annual, NW.
Heaviest winds from NW to W. Winds 40 m.p.h. or over, average 1 day per month during autumn and early winter, 3 days per month in early spring, greatest frequency in March and infrequently in summer.
Highest velocity, 56 m.p.h.
Dense fog 3 days per month during August, September and October, 1 day per month or less during the remaining months. Light fog averages 6 days per month in late summer and autumn, 1 or 2 days per month during remainder of year. Nearly all fogs during morning hours.
Precipitation 1″ or more in 24 hours, averages 1 day or less per month with greatest frequency in spring and least frequency in winter.
Average snowfall, December to March, incl., about 61″.
Weather map and display board, yes.
C.A.B. teletype weather reporting service.
Remarks:
Fields to N and E available for emergency landings. 150-watt radio range beacon with loop antenna, 2 miles SE of NW/SE hard surface runway.

KEENE

Name: Keene Municipal Airport.
Class:
Municipal, lease by city for five years.
Owner, Keene Aviation Development Company.
Operator, E. C. Sweeney, Trustee.
Manager, E. C. Sweeney.
Position:
Lat. 42°57′, long. 72°19′; elevation 520′.
Distance and direction from city, 2½ miles NW of post office.
Description:
Size, Usable Area, 25 acres; Property, 60 acres; Shape, rectangular.
Surface, sod; Gradient, level; Drainage, natural.
Landing strip, 2,200′ x 200′ to 600′, N/S.
Marking thereof, boundary and range markers.
Obstructions:
Hill to SE; trees to E and S.
Marking and Identification:
Name on hangar, "Keene, N. H." and north arrow, painted on roof.
Wind-direction indicator, cone on office building.
Accommodations:
Storage, $1 per night.
Hangars, one, wood 50′ x 70′, 12′ overhead clearance.
Administration building, small office.
Specification fuel and oil, in city.
Quarters, in city; meals, in city.
Transportation to city, taxi.
Meteorological Data:
Prevailing winds, summer NW and SE, winter NW, annual NW.
Heaviest winds are usually from NW or W. Winds of 40 m.p.h. or over are recorded only once or twice a year. Highest recorded velocity is about 60 m.p.h.
Dense fog occurs about 3 days per month during August, September and October and 1 day per month the remainder of the year. Light fog occurs 7 or 8 days per month during August, September and October and about 3 days per month during remainder of year. Fogs are most frequent during early morning hours.
Precipitation as heavy as 1″ or more in 24 hours is recorded about 6 times per year. Average monthly snowfall December-March, incl., is about 14″ and for April and November 3″ or 4″.
Remarks:
"Keene, N. H." on gas tank in city.

LACONIA

Name: Laconia Municipal Airport.
Class:
Municipal.
Owner, Belknap County, part of County Farm.
Operator, County Commissioners.
Manager, Thomas D. Clow.
Position:
Lat. 43°32′; long. 71°29′; elevation, 520′.
Distance and direction from city, one mile NW of Laconia, between Lake Winnisquam and Opechee Bay.
Description:
Size, Usable Area, 1800′ x 200′, E/W, 2100′ x 200′ NW/SE; Property, 50 acres; Shape, L-shaped.
Surface, loam on clay; Gradient, 2%; Drainage, natural.
Landing strips, 2: 2100′ x 200′ NW/SE; 1800′ x 200′ E/W.
Marking thereof, boundary and range markers.
Obstructions:
Wooded hill on N, 150′ above level of field, 60′ trees S of NW/SE strip; 25′ transmission line E of E/W strip, 300′ E.
Marking and Identification:
Name on hangar, "Laconia, N. H." and north arrow, painted on roof.
Wind-direction indicator, wind tee at intersection of landing strips.

Accommodations:
Personnel for servicing, from city.
Hangars, three: T-shaped, single-plane, metal.
Repair facilities, from city.
Specification fuel and oil, from city.
Guard, from city.
Quarters, in city; meals, in city.
Transportation to city, taxi.
Meteorological Data:
Prevailing winds, summer SE; winter NW; annual, NW.
Remarks:
"Laconia, N. H.," directional and north arrows on freight shed in city.

MANCHESTER

Name: Manchester Municipal Airport.
Class:
Municipal.
Owner, City of Manchester.
Operator, Board of Recreation and Aviation Trustees.
Manager, Charles A. Thwyng.
Position:
Lat. 42°56′; long. 71°26′; elevation, 220′.
Distance and direction from city, 4 miles SE of City Hall.
Description:
Size, Usable Area, 146 acres; Property, 350 acres; Shape, triangular.
Surface, sand and turf; Gradient, level (slight pitch to N and W); Drainage, artificial.
Landing strips, 3: NW/SE 3500′ x 500′; E/W 3500′ x 500′; NE/SW 3500′ x 500′.
Hard surface Runways, 3: 2200′ x 100′ NW/SE; 2200′ x 100′ E/W; 2200′ x 100′ NE/SW.
Marking thereof, boundary and range markers.
Obstructions:
Hangars and administration building to W; trees to E, SE and W.
Lighting, obstruction lights on buildings.
Marking and Identification:
Name on hangar, "Manchester" and north arrow painted on roof; "Manchester, N. H." painted on face of hangar.
Wind-direction indicator, lighted cone on hangar.
Lighting:
Beacon, standard airport beacon.
Boundary lights, yes.
Approach lights, yes.
Other lighting, obstruction lights on buildings.
Accommodations:
Personnel for servicing, yes.
Storage rates, $1.50 per night; $15 per month.
Hangars, two: steel 80′ x 84′, overhead clearance 14′; brick and steel 100′ x 100′ x 20′6″ overhead clearance.
Administration building, with complete facilities.
Repair facilities, few; spare parts, some.
Specification fuel and oil, yes.
Quarters, in city; meals, in city.
Transportation to city, bus within one mile, taxi.
Communication and Signal Equipment:
Telephone.
Radio, Boston & Maine-Central Vermont Airline Radio.
Meteorological Data:
Prevailing winds, summer SE, winter NW, annual NW.
Heaviest winds from NW to W. Winds 40 m.p.h. or over, average 1 day per month during autumn and early winter, 3 days per month in early spring, greatest frequency in March, and infrequently in summer.
Highest velocity, 50 m.p.h.
Dense fog 3 days per month during August, September, and October; 1 day per month or less during the remaining months. Light fog averages 6 days per month in late summer and autumn, 1 or 2 days per month during remainder of year. Nearly all fogs occur during morning hours.
Precipitation 1″ or more in 24 hours averages 1 day or less per month, with greatest frequency in spring and least frequency in winter. Average monthly snowfall December-March, incl., about 3″.
Remarks:
"Manchester, N. H.," with directional and north arrows on freight shed in city.

NASHUA

Name: Nashua Municipal Airport.
Class:
Municipal.
Owner and Operator, City of Nashua Airport Commission; F. L. Clark, Clerk.
Manager, H. P. Hartmann.
Position:
Lat. 42°47′; long. 71°31′; elevation, 185′.
Distance and direction from city, 2.4 miles NW of City Hall; Keene Branch of Boston & Maine Railroad on NE side of area.
Description:
Size, Usable Area 105 acres; Property, 140 acres; Shape, rectangular.
Surface, sandy loam; Gradient, level; Drainage, natural and artificial.
Landing strips, 2: 2800′ x 500′ NW/SE; 1800′ x 500′ E/W.
Hard Surface Runway, 2000′ x 100′ NW/SE.
Marking thereof, boundary and range markers.
Obstructions:
Wooded hill on W; hangar, pole line, beacon tower and trees on SW.
Lighting, all obstructions except hill lighted.
Marking and Identifications:
Standard 100′ chrome yellow circle on hard surface runway.
Name on hangar, "Nashua, N. H." on roof with north arrow.
Wind-direction indicators: lighted cone on hangar; wind tee on NE side of field.
Lighting:
Beacon, standard airport beacon.
Boundary lights, yes.
Approach lights, yes.
Other lighting, obstruction lights.
Accommodations:
Personnel for servicing, yes.
Storage rates, $2 per night, $10 to $15 per month.
Hangars, one, brick and steel, 70′ x 70′.
Administration office in hangar.
Repair facilities, some.
Specification fuel and oil, yes.
Guard, from city.
Quarters in city; meals, in city.
Transportation to city, taxi.
Communications and Signal Equipment:
Telephone.
Meteorological Data:
Prevailing winds, summer SE; winter NW; annual, NW.

NEWPORT

Name: Newport Municipal Landing Field.
Class:
Municipal.
Owner and operator, Town of Newport.
Manager, Airport Commission.
Position:
Lat. 43°23′; long. 72°11′; elevation, 775′.
Distance and direction from town, two miles N of Newport, adjacent to Sugar River; 7 miles W of Sunapee Lake; Claremont branch of Boston & Maine Railroad ¼ mile W.
Description:
Size, Usable Area 3000′ x 125′-200′ NW/SE and 1700′ x 450′ N/S; Property, 50 acres; Shape, L-shaped.
Surface, turf; Gradient, rolling; Drainage, natural.
Landing strips, 2: 3000′ x 125′ to 200′ NW/SE; 1700′ x 450′ N/S.
Obstructions:
Sugar River on S and SW bordering landing strips; highway with pole line and trees parallels strip on N and NE.

Marking and Identification:
Name on hangar, "Newport, N. H.", painted with north arrow on roof.
Wind-direction indicator, cone on river bank near intersection of landing strips. Cone on hangar.
Accommodations:
Hangars, one, steel construction, 60′ x 80′, overhead clearance, 12′.
Specification fuel and oil, yes.
Transportation to town, taxi.
Meteorological Data:
Prevailing winds, summer S; winter NW; annual NW and S.

NORTH CONWAY

Name: Conway-White Mountain Airport.
Class:
Commercial.
Owner, White Mountain Airport Corporation.
Manager, Wylie Apte, North Conway, New Hampshire.
Operator, Wylie Apte.
Position:
Lat. 44°2′; long. 71°7′; elevation, 500′.
Distance and direction from town, 2 miles S of North Conway; W of Maine Central Railroad tracks, ½ mile NW of Redstone Granite Quarry.
Description:
Size, Usable Area, 30 acres; Property 100 acres; Shape, irregular.
Surface, sandy loam; Gradient, level; Drainage, natural.
Landing strip, 2100′ x 200′ to 600′ NW/SE.
Marking thereof, boundary and range markers.
Obstructions:
Trees on W and SW side of strip; hills on NE and E, 1850′ elevation.
Marking and Identification:
Name on hangar, "North Conway, N. H." and north arrow painted on roof.
Wind-direction indicator, cone on hangar and wind tee on NE side of field.
Lighting:
Lights on hangar.
Accommodations:
Personnel for servicing, yes.
Storage rates, $1 per night.
Hangars, one, wood 40′ x 50′, 12′ overhead clearance.
Administration building, small office.
Repair facilities, yes; spare parts, some.
Specification fuel and oil, yes.
Guard, yes; fire apparatus, hand extinguishers and two 5-gallon Foamite units.
Quarters, overnight camps; meals, restaurant near field.
Transportation to town, yes.
First aid, kit in hangar.
Communication and Signal Equipment:
Telephone.
Meteorological Data:
Prevailing winds, summer SW; winter W/SW; annual, SW.

PORTSMOUTH

Name: Portsmouth Municipal Airport.
Class:
Municipal.
Owner, City of Portsmouth.
Manager, Carl L. Krieder.
Operator, Warren Schulz.
Position:
Lat. 43°4′; long. 70°49′; elevation 80′.
Distance and direction from city, 3 miles W of city; E of Great Bay.
Description:
Size, Usable Area, 60 acres; Property, 100 acres; Shape, irregular.
Surface, sandy loam; Gradient, less than 2%; Drainage, natural.
Landing strips, 2: 1900′ x 400′ E/W; 2000′ x 300′ NW/SE.
Marking thereof, boundary and range markers.
Obstructions:
Pole line 15′ along highway at E side of field; trees 15′ high along part of S side; stump land and bushes along NW; area of small trees at NE; 50′ beacon tower on E side of field.
Lighting, obstruction lights on beacon tower.
Marking and Identification:
Wind-direction indicator, lighted cone on airway beacon tower.
Other marking, wind tee on E side of airport.
Lighting:
Beacon, standard airway beacon.
Accommodations:
Personnel for servicing, from city.
Hangars, one, single, plane, T-shaped.
Administration building, small office.
Repair facilities, from city.
Specification fuel and oil, yes.
Guard, yes; fire protection, hydrant connection.
Quarters, in city; meals, in city.
Transportation to city, taxi and private car.
Meteorological Data:
Prevailing winds, summer SE; winter NW; annual NW.
Heaviest winds are usually from SW and S. Winds of 40 m.p.h. or over are recorded about 1 day per month January to April, incl. The highest recorded velocity is 60 m.p.h. Dense fog occurs about 2 days per month during September and October and 1 day per month during July and August. Light fog occurs about 4 days per month July to October, incl., and 2 days per month November to March, incl. Fog usually occurs near sunrise and lasts well into the forenoon. Precipitation as heavy as 1″ or more in 24 hours occurs about 1 day during winter months. The average monthly snowfall from November to March, incl., is about 17″.

ROCHESTER

Name: Skyhaven Airport.
Class:
Commercial.
Owner, William H. Champlin.
Operator, Skyhaven, Inc.
Manager, William H. Champlin.
Position:
Lat. 43°17′; long. 70°56′; elevation, 300′.
Distance and direction from city, 3 miles SE from city.
Description:
Size, Usable Area, 20.2 acres except for flagged area; Property, 20.2 acres; Shape, rectangular; Surface, sod; Gradient, slight slope NE; Drainage, natural and some artificial.
Landing strip, NW/SE 1900′ x 400′.
Obstructions:
40′ trees on N side; house and barn on SW side; trees and power line on W side.
Marking (day), area not usable flagged.
Marking and Identification:
Name on hangar, "Skyhaven, Rochester".
Wind-direction indicator, wind cone on W side of field, wind cone on hangar.
Accommodations:
Personnel for servicing, yes.
Storage rates, $1 per night for small ships.
Hangar, one: wood frame and wood floor, 45′ x 36′.
Repair facilities, minor repairs, 20 and 100 hour checks.
Specification fuel and oil, yes. Special types available from bulk oil plant at Newington.
Guard, from city; Fire protection, hand extinguishers.
Quarters, tourist cabins nearby; meals, tourist cabins or in city.
Transportation to city, free.
Communication and Signal Equipment:
Telephone.
Meteorological Data:
Prevailing winds, summer NW; Winter SE.

NOTE: Two commercial fields are being constructed at the present writing, which will be available for limited use in the summer of 1940. One is in the town of Raymond, described as lat. 43°1′, long. 71°10′, elevation 175′. The other is in the town of Plymouth, described as lat. 43°47′, long. 171°45′, elevation, 500′.

RECOMMENDED AIRPORT DEVELOPMENT PROGRAM

ANDOVER LANDING FIELD (Proposed)

Remarks — An area suitable for the development of an airline emergency field to serve Federal Airway No. 4 should be developed in this vicinity.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

BERLIN MUNICIPAL AIRPORT

Remarks — Due to the location and limited size of this airport, and the fact that it is subject to periodic flooding from the nearby river, no further development is recommended.

The present area should be maintained in a safe and usable condition.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed between the highway and the landing area.

Marking and Identification — Boundary and range markers, air marker on the hangar roof and wind direction indicator, should be maintained.

CANAAN AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintainance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

CLAREMONT MUNICIPAL AIRPORT

Additional Land — 45 acres of additional land must be acquired for the proposed development which contemplates the construction of two hard surface runways.

Clearing, Grading, Drainage — 28 acres of the land to be acquired are wooded and must be cleared. The group of oak trees SW of the present E/W landing strip should be removed.

50 acres of land must be graded.

Due to the sandy soil, natural drainage is excellent and artificial drainage would be required only along the two hard surface runways.

Landing Strips — The additional land will permit the development of two landing strips, one 2500′ x 500′ NW/SE, and the other 2500′ x 500′ SW/NE.

Hard Surface Runways — Hard surface runways 2500′ x 100′ should be constructed in the center of each landing strip.

Parking Area and Fencing — Additional parking area, suitably fenced, should be developed between the highway and the landing area.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and the air marker on the hangar roof should be provided and maintained.

Obstructions — The removal of trees mentioned under clearing, grading and drainage and the removal of the ski jump on east side of field will eliminate all obstructions with the exception of the hill to the north of the airport.

Lighting — Airport rotating beacon, ceiling projector, boundary, range, and obstruction lights, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

COLEBROOK AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

CONCORD MUNICIPAL AIRPORT

Additional Land — 50 acres of additional land must be acquired for the proposed development which contemplates the construction of a third hard surface runway.

Clearing, Grading, Drainage — 19 acres of land to be acquired are wooded and must be cleared. 50 acres of land must be graded. Due to the sandy soil, natural drainage is excellent and artificial drainage would be required only along the hard surface runway.

Landing Strip — The additional land will permit the development of three landing strips: NW/SE, E/W, and NE/SW, each 3500′ x 500′.

Hard Surface Runway — A third hard surface runway 2200′ x 100′ should be constructed in the center of the proposed NE/SW landing strip. Subsequent development should provide for lengthening and widening of the three runways to 3500′ x 150′.

Parking Area and Fencing — Additional parking area should be developed south of the present hangars between the highway and the landing area. Fencing of the entire airport should be completed.

Marking and Identification — Lighted wind direction indicators, (wind tee and wind cone), and a lighted air marker on the hangar roof should be maintained.

Obstructions — Trees at the NW, E and SW side of the airport should be removed.

Lighting — Upon the completion of the three 3500′ x 500′ landing strips, boundary and range lights should be relocated at the ends of the strips. Complete flood lighting facilities, including an airport code beacon, meeting the requirements of the Civil Aeronautics Board, should be installed.

CONWAY-WHITE MOUNTAIN MUNICIPAL AIRPORT

Additional Land — 20 acres of additional land must be acquired for the proposed development which contemplates the construction of two hard surface runways.

Clearing, Grading, Drainage — 20 acres of land to be acquired are wooded and must be cleared.

43 acres of land must be graded.

Due to the sandy soil, natural drainage is excellent and artificial drainage would be required only along the hard surface runways.

Landing Strips — The additional land will permit the development of two landing strips, one 3000′ x 500′ NW/SE, and the other 2500′ x 500′ NE/SW.

Hard Surface Runways — Two hard-surface runways, one 2500′ x 100′ NE/SW, and one 2500′ x 100′ NW/SE, should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed between the highway and landing area.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicator (wind tee and wind cone) and the air marker on the hangar roof should be provided and maintained.

Obstructions — Pole lines, buildings and trees along the highway should be suitably lighted.

Lighting — Rotating airport beacon, ceiling projector, boundary, range, and obstruction lights, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

(DOVER) TRI-CITY MUNICIPAL AIRPORT (Proposed)

Land — Sufficient land should be acquired for the development of an airport, adequate for airline operations, to serve the cities of Dover, Somersworth and Rochester.

Landing Strips — Two landing strips adequate for such operations should be developed.

Hard Surface Runways — Two hard surface runways 2500′ x 100′ should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be provided.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and an air marker on the proposed hangar roof should be provided and maintained.

Lighting — Rotating airport beacon, boundary, range and obstruction lights and a ceiling projector, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

ERROL AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

FRANCONIA MUNICIPAL AUXILIARY FIELD (Proposed)

Land — 28 acres of intervale land are available for the proposed development of a two-way landing field.

Clearing, Grading, Drainage — 3 acres of land are wooded and must be cleared.

26 acres of land must be graded.

Due to the gravel soil, natural drainage is good. No artificial drainage is required.

Landing Strip — The proposed area will permit the development of one landing strip 2600′ x 200′ to 500′ NW/SE.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed at the SE end of the field.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Wind direction indicator should be provided and maintained.

Obstructions — The removal of trees along the river bank and those mentioned under clearing, grading and drainage will eliminate all obstructions with the exception of the hill on the west side of field.

FREEDOM AUXILIARY FIELD

Remarks — Due to the limited size of this area, no further development is contemplated other than the removal of obstructions to increase the effective size of the usable area.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

HAMPTON-SEABROOK MUNICIPAL AIRPORT (Proposed)

Land — 300 acres of land should be acquired for the proposed development which contemplates the construction of three graveled landing strips.

Clearing, Grading, Drainage — Existing shanties must be removed.

137 acres of marsh land must be filled and graded.

Proper grading of the area will provide good natural drainage.

Landing Strips — The area will permit the development of three landing strips: one 5000′ x 500′ N/S; another 3500′ x 500′ NW/SE; and a third 3500′ x 500′ NE/SW. These landing strips must be covered with 9″ of gravel to stabilize the sand fill.

A seaplane ramp and marine railway should be constructed from the hangar to a point of sufficient depth of water at low tide to accommodate seaplanes landing in Hampton Harbor.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed between the highway and the landing area.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and a lighted air marker on the proposed hangar roof should be provided and maintained.

Obstructions — Obstruction lights should be provided on the proposed hangar.

Lighting — Rotating airport beacon, airport code beacon, ceiling projector, boundary, range and obstruction lights, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

Accommodations — A hangar for accommodating both land and seaplanes should be constructed at the north end of the area. The hangar should be large enough to include an administration and repair section.

HANOVER-LEBANON MUNICIPAL AIRPORT (Proposed)

Land — Sufficient land should be acquired for the development of an airport adequate for airline operations.

Landing Strips — Two landing strips adequate for such operations should be developed.

Hard Surface Runways — Two hard surface runways 2500′ x 100′ should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be provided.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and an air marker on the proposed hangar roof should be provided and maintained.

Lighting — Rotating airport beacon, boundary, range and obstruction lights and a ceiling projector, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

Accommodations — A hangar with provisions for an administration and repair section should be constructed.

HAVERHILL AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

HILLSBOROUGH AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

KEENE MUNICIPAL AUXILIARY FIELD

Remarks — Due to the location of this area in relation to the surrounding hills, no further development is recommended.

The present area should be maintained in a safe and usable condition for auxiliary purposes

Parking Area and Fencing — Adequate parking area suitably fenced, should be provided.

Marking and Identification — Boundary and range markers, the air marker on the hangar roof and the wind direction indicator, should be maintained.

KEENE MUNICIPAL AIRPORT (Proposed)

Land — Sufficient land should be acquired for the development of an airport adequate for airline operations.

Landing Strips — Two landing strips adequate for such operations should be developed.

Hard Surface Runways — Two hard surface runways 2500′ x 100′ should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be provided.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and an air marker on the proposed hangar roof should be provided and maintained.

Lighting — Rotating airport beacon, boundary, range and obstruction lights and a ceiling projector, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

Accommodations — A hangar with provisions for an administration and repair section should be constructed.

KEENE-PIERCE AUXILIARY FIELD

Remarks — Due to location of this area in relation to the city and surrounding obstacles, no further development is recommended.

The present area should be maintained in a safe and usable condition for auxiliary purposes.

Parking Area and Fencing — Adequate parking area suitably fenced, should be provided.

Marking and Identification — Boundary and range markers, and the wind direction indicator, should be maintained.

LACONIA MUNICIPAL AIRPORT

Clearing, Grading, Drainage — 16 acres of land are covered with brush and must be cleared.

31 acres of land must be graded.

Due to the clay soil, natural drainage is poor. Artificial drainage for the hard surface runways will correct this condition.

Landing Strips — The present area will permit the development of two landing strips: one 2500′ x 500′ NW/SE, and another 2500′ x 500′ N/S.

Hard Surface Runways — Due to soil condition, hard surface runways are essential. Two hard surface runways, one 2500′ x 100′ NW/SE, and another 2500′ x 100′ N/S should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed between the road leading to the field and the landing area.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and an air marker on the proposed hangar roof should be provided and maintained.

Obstructions — The trees at the north end and at the south end of the N/S landing strip should be removed. The pole line at the east end of the NW/SE landing strip should be relocated. The hill to the north should be marked by suitable obstruction lights.

Lighting — Rotating airport beacon, ceiling projector, boundary, range and obstruction lights, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

Accommodations — A hangar with provisions for an administration and repair section should be constructed.

LINCOLN-WOODSTOCK AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

MANCHESTER MUNICIPAL AIRPORT

Drainage — Additional drainage should be installed along the proposed extension of the three existing hard surface runways.

Landing Strips — Develop an E/W strip 3500′ in effective length.

Hard Surface Runways — The three existing hard surface runways should be increased to 3500′ x 150′.

Fencing — Fencing of the entire airport should be completed.

Marking and Identification — Lighted wind direction indicators (wind tee and wind cone) and a lighted air marker on the hangar roof should be maintained.

Obstructions — Trees to W, E, and NE of field should be removed. Hill on E side of field should be marked with obstruction lights.

Lighting — Airport code beacon, ceiling projector and complete flood lighting facilities, meeting the requirements of the Civil Aeronautics Board, should be installed.

NASHUA MUNICIPAL AIRPORT

Additional Land — 30 acres of additional land must be acquired for the proposed development which contemplates the construction of two additional hard surface runways.

Clearing, Grading, Drainage — 30 acres of land are covered with brush and must be cleared.

30 acres of land must be graded.

Due to the sandy soil, natural drainage is excellent and artificial drainage would be required only along the hard surface runways.

Landing Strips — The additional land will permit the development of two additional landing strips: one 2500′ x 500′ N/S, and the other 2500′ x 500′ E/W.

The NW/SE landing strip should be increased to 3500′ x 500′.

Hard Surface Runways — Hard surface runways 2500′ x 150′ should be constructed in the center of the N/S and E/W landing strips.

The present NW/SE hard surface runway should be increased to 3500′ x 150′.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and the air marker on the hangar roof should be maintained.

Obstructions — Trees to the west and northwest of the area should be removed.

Lighting — Upon the completion of the three landing strips, boundary and range lights should be provided. Complete flood lighting facilities and a ceiling projector, meeting the requirements of the Civil Aeronautics Board, should be installed.

NEW DURHAM AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

NEWPORT AUXILIARY LANDING FIELD

Remarks — Due to limited size and surrounding obstacles, no further development is contemplated.

The present area should be maintained in a safe and usable condition.

Parking Area and Fencing — Adequate parking area suitably fenced, should be provided.

Marking and Identification — Boundary and range markers, the air marker on the hangar roof and the wind direction indicator, should be maintained.

FINANCIAL SUMMARY—RECOMMENDED

The estimates below were prepared by W. Russell Hilliard, Airport Enginee
Planning Engineer, State Planning and Development Commissio

	ADDI-TIONAL LAND	CLEARING, GRADING, DRAINAGE Labor	Material and Equipment	Total	LANDING STRIP Labor	Material and Equipment	Total	HARD SURFACE AREAS Labor	Material and Equipment	Total
Andover Landing Field (Proposed)	$2,000.00	$15,000.00	$20,000.00	$35,000.00	—	—	—	—	—	—
Berlin Municipal Airport	—	—	—	—	—	—	—	—	—	—
Canaan Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Claremont Municipal Airport	2,000.00	10,000.00	12,500.00	22,500.00	—	—	—	$24,480.00	$36,720.00	$61,200.00
Colebrook Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Concord Municipal Airport	5,000.00	45,000.00	5,000.00	50,000.00	—	—	—	68,000.00	102,000.00	170,000.00
Conway-White Mountain Municipal Airport	3,000.00	29,000.00	16,000.00	45,000.00	—	—	—	25,560.00	38,340.00	63,900.00
(Dover) Tri-City Municipal Airport (Proposed)	10,000.00	30,000.00	20,000.00	50,000.00	—	—	—	35,000.00	52,500.00	87,500.00
Errol Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Franconia Municipal Auxiliary Field (Proposed)	1,000.00	4,300.00	6,300.00	10,600.00	—	—	—	—	—	—
Freedom Auxiliary Field	—	—	—	—	—	—	—	—	—	—
Hampton-Seabrook Municipal Airport (Proposed)	2,000.00	10,000.00	50,000.00	60,000.00	$30,000.00	$45,000.00	$75,000.00	—	—	—
Hanover-Lebanon Municipal Airport (Proposed)	10,000.00	25,000.00	50,000.00	75,000.00	—	—	—	58,310.00	87,464.00	145,774.00
Haverhill Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Hillsborough Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Keene Municipal Auxiliary Field	—	—	—	—	—	—	—	—	—	—
Keene Municipal Airport (Proposed)	5,000.00	30,000.00	20,000.00	50,000.00	—	—	—	24,480.00	36,720.00	61,200.00
Keene-Pierce Auxiliary Field	—	—	—	—	—	—	—	—	—	—
Laconia Municipal Airport	—	30,000.00	20,000.00	50,000.00	—	—	—	25,560.00	38,340.00	63,900.00
Lincoln-Woodstock Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Manchester Municipal Airport	—	2,500.00	2,500.00	5,000.00	—	—	—	50,800.00	76,200.00	127,000.00
Nashua Municipal Airport	2,000.00	20,000.00	5,000.00	25,000.00	—	—	—	60,000.00	90,000.00	150,000.00
New Durham Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Newport Auxiliary Field	—	—	—	—	—	—	—	—	—	—
Peterborough Auxiliary Field (Proposed)	2,500.00	10,000.00	15,000.00	25,000.00	2,500.00	2,500.00	5,000.00	—	—	—
Pittsburg Auxiliary Field (Proposed)	1,000.00	10,000.00	15,000.00	25,000.00	—	—	—	—	—	—
Plymouth Auxiliary Field	—	—	—	—	—	—	—	—	—	—
Portsmouth Municipal Airport	2,000.00	13,000.00	7,000.00	20,000.00	—	—	—	50,000.00	75,000.00	125,000.00
Raymond Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Rye Military Auxiliary Field (Proposed)	1,000.00	10,000.00	30,000.00	40,000.00	20,000.00	30,000.00	50,000.00	—	—	—
Sandwich Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Stratford Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Twin Mountain Auxiliary Field	—	—	—	—	—	—	—	—	—	—
Warren Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Whitefield Municipal Airport (Proposed)	5,000.00	15,000.00	20,000.00	35,000.00	—	—	—	50,000.00	75,000.00	125,000.00
Winchester Auxiliary Field (Proposed)	—	—	—	—	—	—	—	—	—	—
Wolfeboro Municipal Airport (Proposed)	2,000.00	30,000.00	20,000.00	50,000.00	—	—	—	24,480.00	36,720.00	61,200.00
Total	$55,500.00	$338,800.00	$334,300.00	$673,100.00	$52,500.00	$77,500.00	$130,000.00	$496,670.00	$745,004.00	$1,241,674.00

PETERBOROUGH AUXILIARY FIELD (Proposed)

Additional Land — 27 acres of additional land must be acquired for the proposed development which contemplates the construction of a two-way landing field.

Clearing, Grading, Drainage — 3 acres of land to be acquired are wooded and must be cleared.

30 acres of land must be graded.

Due to the clay soil, artificial drainage is necessary along the sides of the proposed gravel runway.

Landing Strip — The additional land will permit the development of one landing strip 2500′ x 500′ NW/SE. A gravel runway 2500′ x 150′ should be constructed in the center of the landing strip.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed between the highway and the landing area.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. A wind direction indicator should be provided and maintained.

Obstructions — Scattered elm trees and brush along stone walls should be removed. Pole line at southeast end of the area should be relocated.

PITTSBURG AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed as a port of entry should be selected in this vicinity.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

PLYMOUTH AUXILIARY FIELD

Remarks — Due to the location and limited size of this field, and the fact that it is subject to periodic flooding from the nearby river, no further development is recommended.

The present area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

PORTSMOUTH MUNICIPAL AIRPORT

Additional Land — 38 acres of additional land must be acquired for the proposed development which contemplates the construction of two hard surface runways.

Clearing, Grading, Drainage — 90 acres of land are wooded and must be cleared.

40 acres of land must be graded.

Due to the good gravel soil, natural drainage is excellent and artificial drainage would be required only along the hard surface runways.

Landing Strips — The additional land will permit the development of two landings strips, one 3500′ x 500′ NW/SE, and the other 2500′ x 500′ NE/SW.

Hard Surface Runways — Two hard surface runways, one 3500′ x 150′ NW/SE, and one 2500′ x 150′ NE/SW, should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed between the highway and landing area.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. A lighted wind tee and an air marker on the proposed hangar roof should be provided and maintained.

Obstructions — Trees on south side of area should be removed. Stand pipe on west side of area should be marked with obstruction lights.

Lighting — A ceiling projector, boundary, range, and obstruction lights, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

Accommodations — A hangar, large enough to include an administration and repair section should be constructed.

FIVE YEAR AIRPORT DEVELOPMENT PROGRAM

State Department of Aeronautics, with the assistance of Herbert C. Person,
They are approximate only and are based upon 1940 prices.

MARKING			LIGHTING			FENCING			HANGAR			TOTAL COST		
Labor	Material and Equipment	Total	Labor	Material and Equipment	Total	Labor	Material and Equipment	Total	Labor	Material and Equipment	Total	Labor	Material and Equipment	Total
$125.00	$125.00	$250.00	—	—	—	$500.00	$500.00	$1,000.00	—	—	—	$15,625.00	$20,625.00	$38,250.00
25.00	75.00	100.00	—	—	—	250.00	250.00	500.00	—	—	—	275.00	325.00	600.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	$3,000.00	$7,000.00	$10,000.00	500.00	500.00	1,000.00	—	—	—	38,105.00	56,845.00	96,950.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	—	—	—	116,625.00	114,625.00	236,250.00
125.00	125.00	250.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	—	—	—	58,185.00	61,965.00	123,150.00
250.00	250.00	500.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	$4,000.00	$8,000.00	$12,000.00	72,750.00	88,250.00	171,000.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
250.00	250.00	500.00	—	—	—	250.00	250.00	500.00	—	—	—	4,800.00	6,800.00	12,600.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
250.00	250.00	500.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	8,000.00	12,000.00	20,000.00	51,750.00	114,750.00	168,500.00
250.00	250.00	500.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	4,000.00	8,000.00	12,000.00	91,060.00	153,214.00	254,274.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
25.00	75.00	100.00	—	—	—	250.00	250.00	500.00	—	—	—	275.00	325.00	600.00
250.00	250.00	500.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	4,000.00	8,000.00	12,000.00	62,230.00	72,470.00	139,700.00
250.00	250.00	500.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	4,000.00	8,000.00	12,000.00	63,185.00	73,965.00	137,150.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	2,000.00	5,000.00	7,000.00	500.00	500.00	1,000.00	—	—	—	55,925.00	84,325.00	140,250.00
125.00	125.00	250.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	—	—	—	83,625.00	102,625.00	188,250.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
250.00	250.00	500.00	—	—	—	500.00	500.00	1,000.00	—	—	—	13,250.00	18,250.00	34,000.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	10,375.00	15,375.00	26,750.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	4,000.00	8,000.00	12,000.00	70,625.00	97,625.00	170,250.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
250.00	250.00	500.00	—	—	—	500.00	500.00	1,000.00	—	—	—	30,750.00	60,750.00	92,500.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
250.00	250.00	500.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	4,000.00	8,000.00	12,000.00	72,750.00	110,750.00	188,500.00
125.00	125.00	250.00	—	—	—	250.00	250.00	500.00	—	—	—	375.00	375.00	750.00
250.00	250.00	500.00	3,000.00	7,000.00	10,000.00	500.00	500.00	1,000.00	4,000.00	8,000.00	12,000.00	62,230.00	72,470.00	136,700.00
$5,550.00	$5,650.00	$11,200.00	$38,000.00	$89,000.00	$127,000.00	$13,250.00	$13,250.00	$26,500.00	$36,000.00	$68,000.00	$104,000.00	$980,770.00	$1,332,704.00	$2,368,974.00

RAYMOND AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

RYE MILITARY AUXILIARY FIELD (Proposed)

Land — Additional land should be acquired for the proposed development which contemplates the construction of two graveled landing strips.

Clearing, Grading, Drainage — Existing tree and shrub growth must be removed. The marsh to be filled by hydraulic dredging of Rye Harbor.

Landing Strips — The area will permit the development of 2 landing strips, one 2000′ x 500′ NW/SE and one 2000′ x 500′ NE/SW. These landing strips must be covered with 9″ of gravel to stabilize the sand fill.

SANDWICH AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

STRATFORD AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

TWIN MOUNTAIN AUXILIARY FIELD

Remarks — Due to the location and limited size of this area, no further development is contemplated.

The present area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

WARREN AUXILIARY FIELD (Proposed)

Remarks — An area suitable for emergency landings should be set aside in this vicinity.

A site, sufficiently level and clear, which can be developed at a comparatively small cost for its construction and maintenance, should be selected.

The area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

WHITEFIELD MUNICIPAL AIRPORT (Proposed)

Land — 120 acres of land must be acquired for the proposed development which contemplates the construction of two hard surface runways.

Clearing, Grading, Drainage — 56 acres of land must be graded.

Due to the sandy soil, natural drainage is excellent and artificial drainage would be required only along the hard surface runways.

Landing Strips — The proposed acquisition of land will permit the development of two landing strips: one 3000′ x 500′ NW/SE, and another 2500′ x 500′ NE/SW.

Hard Surface Runways — Two hard surface runways, one 3000′ x 150′ NW/SE, and one 2500′ x 150′ NE/SW should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be developed between the highway and landing area.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and an air marker on the proposed hangar roof should be provided and maintained.

Obstructions — The highway, railroad, pole line, should be relocated; trees around edge of field which constitute obstructions to be removed.

Lighting — Airport rotating beacon, ceiling projector, boundary, range, and obstruction lights, meeting the requirements of the Civil Aeronautics Board, should be installed.

Accommodations — A hangar, large enough to include an office and repair section, should be constructed.

WINCHESTER AUXILIARY FIELD (Proposed)

Remarks — Due to the limited size of this area, no further development is contemplated.

The present area should be maintained in a safe and usable condition.

Marking, Identification and Fencing — The area should be suitably marked and fenced.

WOLFEBORO MUNICIPAL AIRPORT (Proposed)

Land — Sufficient land should be acquired for the development of an airport, adequate for airline operation, to serve the eastern part of the Lakes Region.

Landing Strips — Two landing strips adequate for such operations should be developed.

Hard Surface Runways — Two hard surface runways 2500′ x 100′ should be constructed in the center of the landing strips.

Parking Area and Fencing — Adequate parking area, suitably fenced, should be provided.

Marking and Identification — The usable area should be marked in outline with standard boundary markers. Lighted wind direction indicators (wind tee and wind cone) and an air marker on the proposed hangar roof should be provided and maintained.

Lighting — Rotating airport beacon, boundary, range and obstruction lights and a ceiling projector, meeting the requirements of the Civil Aeronautics Board specifications, should be installed.

INDEX

Front Cover Photograph by Winthrop L. Perry